



April 7, 2004

**VIA CERTIFIED MAIL**

**RUTGERS Organics Corporation**

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**Re: MARCH 2004 MONTHLY REPORT  
RI/FS & REMOVAL ACTION  
NEASE CHEMICAL SITE  
SALEM, OHIO**

In accordance with Paragraph X E of the Administrative Order by Consent regarding a Remedial Investigation/Feasibility Study (RI/FS) of the Nease Chemical Site in Salem, Ohio, attached is a copy of the March 2004 RI/FS Progress Report.

Additionally, in accordance with Paragraph 14 of the Administrative Order by Consent, signed November 17, 1993, attached is a copy of the March 2004 Removal Action Progress Report

Please contact us if you have any questions regarding activities discussed in these reports.

Sincerely,

A handwritten signature in cursive script that reads "Rainer Domalski".

Dr. Rainer F. Domalski  
Manager Remediation Projects

Enclosure

cc: M. Hardy – Thompson Hine  
Steve Finn – Golder Associates, Inc.

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**NEASE CHEMICAL SITE, SALEM, OHIO  
REMEDIAL INVESTIGATION/FEASIBILITY STUDY  
MONTHLY PROGRESS REPORT  
MARCH 2004**

**1.0 INTRODUCTION**

This progress report has been prepared in accordance with Paragraph XE of the Administrative Order of Consent regarding a Remedial Investigation/Feasibility Study of the Nease Chemical Site in Salem, Ohio. The report summarizes the major RI/FS actions during the month along with investigation results and any problems encountered in the project. Activities planned for next month are also presented.

**2.0 SUMMARY OF ACTIVITIES PERFORMED**

**2.1 Project Activity Summary**

The activities that were initiated and/or completed during the month are described. All activities were performed in accordance with the detailed protocol provided in the approved Work Plan.

**2.2 Fieldwork**

No fieldwork occurred during this month.

**2.3 Reports**

**2.3.1 Remedial Investigation - Endangerment Assessment (EA)**

Based on 2002 comments from the agencies, a revised Endangerment Assessment was submitted in April (Chapter I through VIII; Health) and June 2003 (Chapter IX and X; Ecological). It is currently under agencies' final review. On February 9, 2004, OEPA submitted its comments regarding the ecological assessment. USEPA Region V submitted its comments in March 16, 2004. In agreement with the agencies, ROC will deliver a final draft EA (Chapter I – X) by April 19, 2004.

On March 18, 2003, the agencies and ROC had a meeting regarding the upcoming Feasibility Study (FS). The parties discussed site conceptual model, proposed operational units (OU 1- 4), remedial actions objectives and technology screening. A follow-up meeting was held on October 15, 2003. ROC presented the results from July 2003 groundwater sampling round and its meaning for the site remediation. The parties also discussed the Remedial Action Objectives and the remedial alternatives to be evaluated in the final document. US EPA Region V submitted its comments on March 16, 2004. OEPA's comments are expected in April.

**2.4 Meetings**

No meeting was held during this month.

**3.0 VARIATIONS FROM THE APPROVED RI/FS WORK PLAN**

No variations from the approved Work Plans occurred during the month.

**4.0 RESULTS OF SAMPLING, TESTS AND ANALYSES**

No sampling was conducted during this month.

## **5.0 PROJECT SCHEDULE**

The attached updated Work Plan schedule identifies completion and target dates for project activities. Those scheduled to occur over the next several months include:

- Prepare Feasibility Study (OU-2; groundwater and soil)

## **6.0 DIFFICULTIES ENCOUNTERED AND ACTION TAKEN TO RESOLVE PROBLEMS**

No significant difficulties were encountered.

## **7.0 PERSONNEL CHANGES**

US EPA Region V named Matthew J. Ohl as the new Remedial Project Manager.

## **8.0 ANTICIPATED PROJECT ACTIVITIES FOR APRIL 2004**

- Monthly Progress Report March 2004
- Prepare Feasibility Study (OU-2) and Endangerment Assessment

Table 1  
Nease Chemical Site, Salem, Ohio  
RI/FS Schedule

Date	Task/Activity/Deliverable/Milestone
February 22, 1988	Effective Date of RI/FS Administrative Order of Consent
April 5, 1991	Partial Salem RI submitted to Agencies
July 6, 1993	Salem RI submitted to Agencies
July 29-30, 1993	Source sampling event, ROC/Golder and Agencies/B&V WST
August 10, 1993	Submit monthly progress report
September 10, 1993	Submit monthly progress report
October 10, 1993	Submit monthly progress report
November 10, 1993	Submit monthly progress report
Nov./Dec., 1993	Egypt Swamp Sampling Event
December 10, 1993	Submit monthly progress report
January 10, 1994	Submit monthly progress report
February 10, 1994	Submit monthly progress report
March 10, 1994	Submit monthly progress report
March 30, 1994	Submit Supplemental Production Well Closure Plan to Agencies
April 10, 1994	Submit monthly progress report
May 10, 1994	Submit monthly progress report
June 10, 1994	Submit monthly progress report
July 10, 1994	Submit monthly progress report
August 10, 1994	Submit monthly progress report
August 18, 1994	Submit to Agencies Additional RI Report: MFLBC
August 22, 1994	Receipt of US EPA Draft Comments on 1993 Salem RI Report
September 6, 1994	Receipt of US EPA Comments on 1993 Salem RI Report
September 10, 1994	Submit monthly progress report
September 23, 1994	Receipt of USEPA Comments on Well Closure Plan
October 7, 1994	Submit Supplemental Production Well Closure Plan (Revision #1)
October 10, 1994	Submit monthly progress report
November 8, 1994	Receipt of USEPA approval of Well Closure Plan (Revision #1)
November 10, 1994	Submit monthly progress report
December 10, 1994	Submit monthly progress report
December 13-19, 1994	Production Well Closure Field Work
January 10, 1995	Submit monthly progress report
February 10, 1995	Submit monthly progress report
February 27, 1995	Receipt of USEPA Comments to Additional Remedial Investigation Report
March 10, 1995	Submit monthly progress report
March 30, 1995	Revised MFLBC Sampling Plan submitted
April 10, 1995	Submit monthly progress report
April 25, 1995	Meet to finalize MFLBC Sampling Plan
May 10, 1995	Submit monthly progress report

Date	Task/Activity/Deliverable/Milestone
June 6, 1995	Propose groundwater sampling Round 3
June 10, 1995	Submit monthly progress report
June 30, 1995	Receive agency comments to groundwater sampling Round 3 proposal
July 5, 1995	Receive agency approval of MFLBC Sampling Plan
July 6, 1995	Submit revised Round 3 groundwater sampling proposal
July 10, 1995	Submit monthly progress report
August 1, 1995	Receive Agency approval for CAL MPK analysis
August 4, 1995	Submit Rt. 14/Feeder Creek Plan to Agencies
August 10, 1995	Submit monthly progress report
September 5-15, 1995	Anticipated MFLBC phase III Sample Collection
September 10, 1995	Submit monthly progress report
September 12, 1995	Receive agency comments on Rt. 14/Feeder Creek Sampling Plan
September 18-30, 1995	Round 3 Groundwater Collection
October 6, 1995	Submit revised Rt. 14/Feeder Creek Sampling Plan
October 25, 1995	Resubmit revised Rt. 14/Feeder Creek Sampling (Verbal Comments)
October 30-November 2, 1995	Collect Rt. 14/Feeder Creek Samples
November 10, 1995	Submit monthly progress report
December 10, 1995	Submit monthly progress report
December 28, 1995	Receive Agency comments to Remedial Investigation Report
January 10, 1996	Submit monthly progress report
January 31, 1996	Submit Revised RI Report Volumes 1, 1A, 3 and 4
February 10, 1996	Submit monthly progress report
March 10, 1996	Submit monthly progress report
April 10, 1996	Submit monthly progress report
April 24, 1996	Meeting with agencies to discuss project status and submittal dates
May 10, 1996	Submit monthly progress report
May 24, 1996	Submit Appendix N
June 10, 1996	Submit monthly progress report
June 14, 1996	Submit Round 3 Groundwater Sampling Data
June 19, 1996	Revised RI Approved by EPA/OEPA
July 10, 1996	Submit monthly progress report
August 10, 1996	Submit monthly progress report
September 6, 1996	Submit monthly progress report
September 11, 1996	Meeting with Agencies to discuss Endangerment Assessment Comments
October 10, 1996	Submit monthly progress report, Submit revised Rt. 14/FC Investigation Results, Submit revised Eastern Plume/DNAPL Work Plan
November 10, 1996	Submit monthly progress report
December 10, 1996	Submit monthly progress report
December, 1996	Complete Fieldwork E. Plume/DNAPL Workplan
January 10, 1997	Submit monthly progress report
January 23, 1997	Piezometer (hydropunch) sampling conducted
February 7, 1997	Submit monthly progress report

Date	Task/Activity/Deliverable/Milestone
March 7, 1997	Submit monthly progress report
March 25, 1997	Receive agency comments on E. Plume/DNAPL Workplan
April 10, 1997	Submit monthly progress report
May 9, 1997	Submit monthly progress report
June 9, 1997	Submit monthly progress report
June 30, 1997	Receive Agency comments on Appendix N, RI
July 8, 1997	Submit monthly progress report
July 18, 1997	Submit revision package for Appendix N addressing agency comments
August 8, 1997	Submit DNAPL/Eastern Plume Report and Monthly progress report
August 20, 1997	Agency approval of Appendix N
September 10, 1997	Submit monthly progress report
October 10, 1997	Submit monthly progress report
November 10, 1997	Submit monthly progress report
December 10, 1997	Submit monthly progress report
December 18, 1997	Receive (12/19/97) agency comments to previously submitted EA chapters
December 18, 1997	Receive (12/29/97) USEPA Comments to Eastern Plume/DNAPL report
December 29, 1997	Receive (12/31/97) OEPA Comments to Eastern Plume/DNAPL report
January 8, 1998	Clarifications to agency EA comments requested by ROC letter
January 9, 1998	Submit monthly progress report
January 13, 1998	Telephone conference to obtain clarification on agency EA comments (human health)
January 22, 1998	Meeting in US EPA's Chicago offices to discuss Eastern Plume/DNAPL report comments
January 28, 1998	Telephone conference to obtain clarifications on agency EA comments
January 29, 1998	Telephone conference to obtain clarifications on agency EA comments (Ecological and revision schedule)
February 3, 1998	ROC letter regarding summary of previous EA clarification telephone calls
February 10, 1998	Submit monthly progress report
February 12, 1998	Meeting in Twinsburg, OH to discuss agency comment to EA chapters and approach for finalization of remaining chapters.
March 10, 1998	Submit monthly progress report
April 1, 1998	Receiver USEPA comments to revised Eastern Plume/DNAPL report
April 8, 1998	Submit monthly progress report
April 15, 1998	Submit Complete EA
May 7, 1998	Submit monthly progress report
June 9, 1998	Submit monthly progress report
July 10, 1998	Submit monthly progress report
August 5, 1998	Revised Eastern Plume/DNAPL report submitted
August 7, 1998	Submit monthly progress report
August 14, 1998	Receive draft agency comments on EA
August 26, 1998	Meeting in Twinsburg, Ohio to discuss EA comments
September 10, 1998	Submit monthly progress report
October 8, 1998	Meeting to discuss EA technical issues (EPA office, Chicago)
October 9, 1998	Submit monthly progress report

Date	Task/Activity/Deliverable/Milestone
November 6, 1998	Teleconference on EA comments
November 10, 1998	Submit monthly progress report
November 30, 1998	Receive additional agency comments on EA
December 10, 1998	Submit monthly progress report
December 15, 1998	Teleconference on EA comments
January 6, 1999	Teleconference on EA comments (remaining item information status)
January 8, 1999	Submit monthly progress report
January 22, 1999	Submit EA Appendices
February 3, 1999	Agency MFLBC Sampling Letter received
February 9, 1999	Receive partial agency comments to EA/Appendices
February 10, 1999	Submit monthly progress report
February 23, 1999	ROC responds to MFLBC Sampling proposal
March 9, 1999	Submit monthly progress report
March 16, 1999	Receive additional agency comments to EA/Appendices, more anticipated
April 8, 1999	Receive final agency comments to EA/Appendices
April 9, 1999	Submit monthly progress report
May 10, 1999	Submit monthly progress report
May 17, 1999	Agency response letter to ROC MFLBC sampling proposal received
June 7, 1999	Conference call to resolve details on MFLBC sampling program and locations
June 9, 1999	Submit monthly progress report
June 18, 1999	Submit revised EA
July 9, 1999	Submit monthly progress report
July 12-21, 1999	Conduct additional MFLBC field sampling work
July 28, 1999	ROC proposal for Residential well sampling program via a conference call
August 8, 1999	Submit monthly progress report
September 1, 1999	Agency approval of residential well sampling program via a conference call
September 10, 1999	Submit monthly progress report
October 8, 1999	Submit monthly progress report
November 8, 1999	Submit monthly progress report
December 9, 1999	Submit monthly progress report
January 10, 2000	Submit monthly progress report
January 11, 2000	Conduct Residential Well Sampling Program
February 10, 2000	Submit monthly progress report
March 8, 2000	Submit monthly progress report
March 31, 2000	Submit MFLBC Data Summary Report
April 4, 2000	Submit monthly progress report
May 10, 2000	Submit monthly progress report
June 7, 2000	Submit Residential Well Sampling Results
June 8, 2000	Submit monthly progress report
July 7, 2000	Submit monthly progress report
July 31, 2000	Received agency comment letter regarding draft Endangerment

Date	Task/Activity/Deliverable/Milestone
	Assessment
August 8, 2000	Submit monthly progress report
September 8, 2000	Submit monthly progress report
October 4, 2000	Submit monthly progress report
October 11, 2000	Agencies/ROC meeting regarding agency's comments to draft Endangerment Assessment
November 3, 2000	Submit monthly progress report
November 14, 2000	Submit parts of the revised Endangerment Assessment (Chapter 1 – 4, 9)
December 8, 2000	Submit monthly progress report
December 12, 2000	Submit parts of the revised Endangerment Assessment (Chapter 10)
January 4, 2001	Submit monthly progress report
February 6, 2001	Submit monthly progress report
March 8, 2001	Submit monthly progress report
April 9, 2001	Submit monthly progress report
April 11, 2001	Received agencies' comments regarding Appendix I
May 8, 2001	Submit monthly progress report
May 18, 2001	Received agencies' comments regarding Appendix I
June 6, 2001	Submit monthly progress report
July 6, 2001	Submit monthly progress report
August 7, 2001	Submit monthly progress report
August 20, 2001	Received agencies' comments regarding indoor air
September 7, 2001	Received agencies' comments regarding dermal exposure
September 10, 2001	Submit monthly progress report
September 18, 2001	Initial response to agencies' September 7, 2001 letter
October 5, 2001	Submit Monthly progress report
October 19, 2001	Received agencies' comment letter regarding EA issues
November 2, 2001	Response to agencies' comments October 19, 2001
November 7, 2001	Submit monthly progress report
December 7, 2001	Submit monthly progress report
December 28, 2001	Submit draft final Endangerment Assessment (Human Health)
January 9, 2001	Submit monthly progress report
January 25, 2002	Submit revised EA Chapters VI and VIII
February 8, 2002	Submit monthly progress report
March 5, 2002	Submit monthly progress report
April 5, 2002	Submit monthly progress report
May 8, 2002	Submit monthly progress report
June 5, 2002	Submit monthly progress report
July 8, 2002	Submit monthly progress report
August 9, 2002	Submit monthly progress report
August 26, 2002	EPA submit comments regarding ecological part of EA
September 10, 2002	Submit monthly progress report
October 10, 2002	Submit monthly progress report
October 30, 2002	Submit Draft Endangerment Assessment (Human Health Part)
November 6, 2002	Submit monthly progress report
December 3, 2002	Meeting with the agencies regarding the ecological part of the EA
December 10, 2002	Submit monthly progress report
December 30, 2002	Agency comment letter regarding EA
January 9, 2003	Submit progress report
February 5, 2003	Submit monthly progress report
March 18, 2003	Meeting between agencies and ROC regarding FS
March 19, 2003	Submit monthly progress report



Date	Task/Activity/Deliverable/Milestone
April 7, 2003	Submit monthly progress report
April 25, 2003	Submit revised EA Chapter I – VIII (Human Health)
May 7, 2003	Submit monthly progress report
June 10, 2003	Submit monthly progress report
June 23, 2003	Submit revised EA Chapter IX and X (Ecology)
July 8, 2003	Submit monthly progress report
July 21, 2003	Start groundwater sampling (36 MW, sandbank)
August 8, 2003	Submit monthly progress report
September 5, 2003	Submit monthly progress report
October 8, 2003	Submit monthly progress report
October 15, 2003	Meeting between agencies and ROC (FS groundwater and soil)
October 10, 2003	Submit monthly progress report
November 10, 2003	Submit monthly progress report
December 8, 2003	Submit monthly progress report
January 9, 2004	Submit monthly progress report
February 6, 2004	Submit monthly progress report
February 9, 2004	OEPA comments regarding ecological assessment
March 15, 2004	Submit monthly progress report
March 16, 2004	US EPA Region V comments regarding EA and FS (OU-2)
April 7, 2004	Submit monthly progress report

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**NEASE CHEMICAL SITE, SALEM, OHIO  
REMOVAL ACTION  
MONTHLY PROGRESS REPORT  
MARCH 2004**

**1.0 INTRODUCTION**

This progress report has been prepared in accordance with Paragraph 14 of the "Order" section of the Administrative Order by Consent (AOC) Docket No. V-W-94-C-212, effective November 17, 1993, regarding a Removal Action at the Nease Chemical Site in Salem, Ohio. The report summarizes the major activities during the month along with investigation results and any problems encountered on the project. Activities planned for next month are also presented.

**2.0 SUMMARY OF ACTIVITIES PERFORMED**

**2.1 Project Activity**

The activities that were initiated and/or completed during this month are described below. Activities were performed in accordance with the Removal Action AOC.

**2.2 Work Plan Preparation/Reports**

No work plans/reports were submitted this period.

**2.3 Fieldwork**

**2.3.1 Site Inspections**

The results of the monthly site inspection carried out at the site in March 29, 2004 are shown in Attachment 1.

**2.3.2 Monthly Water Level Measurements**

The next water level measurements is scheduled for May 2004.

**2.3.3 Treatment Plant Operation**

The treatment plant operated normally throughout the month.

**2.4.1.1 Meetings**

No meetings were held this month.

**3.0 VARIATIONS FROM THE APPROVED REMOVAL ACTION WORK PLAN**

There were no variations from the approved Removal Action Work Plan for the month.

**4.0 RESULTS OF INSPECTIONS, ENVIRONMENTAL SAMPLING, TESTS AND ANALYSES**

Water monitoring samples were collected from the treatment plant during February/March 2004. Attachment 2 and 3 include results from water and air samples collected on February 18, 2004 and March 3, 2004 (Lab: Exygen Research). The mid-March sampling results were not available at the time reporting. It will be included in the next monthly report. Attachment 4 and 5 include two

acute/chronic toxicity evaluation conducted February 17-21, 2004 and February 17-24, 2004. The tests were performed from American Aquatic Testing, Inc..

## **5.0 PROJECT SCHEDULE**

The updated Work Plan schedule identifies completion and target dates for project activities.

## **6.0 DIFFICULTIES ENCOUNTERED AND ACTION TAKEN TO RESOLVE PROBLEMS**

No significant difficulties were reported this month

## **7.0 PERSONNEL CHANGES**

US EPA Region V named Matthew J. Ohl as the Remedial Project Manager.

## **8.0 TYPES AND QUANTITIES OF REMOVED MATERIALS**

For the period from March 1 through March 31, 2004 the following material was removed:

- 15,000 gallons of leachate and/or backwash water were disposed off-site at a licensed treatment facility.
- Approximately 284,724 gallons were pumped from Leachate Collection System 1 (LCS-1) (total for LCS-1 =15,707,626 gal).
- Approximately 11,420 gallons were pumped from Leachate Collection System 2 (LCS-2) (total for LCS-2 = 1,100,531 gal).
- No water was pumped from Pond 1 (total for the pond = 879,613 gallons).
- Approximately 23.24 pounds of organic compounds were removed during pumping (estimate based on average VOC/SVOC concentrations for each source).

## **9.0 ANTICIPATED PROJECT ACTIVITIES FOR APRIL 2004**

Removal Action activities scheduled for the upcoming month include on-going implementation of the approved Removal Action Work Plan involving:

- Collection of groundwater from the existing collection systems LCS-1, LCS-2 and Pond 1.
- Monthly Progress Report

Table 1  
Nease Chemical Site, Salem, Ohio  
Removal Action Schedule

Date	Task/Activity/Deliverable/Milestone
November 17, 1993	Removal AOC Effective Date
November 17, 1993	Commence Preparation of Removal Action Work Plan
November 23, 1993	Submit Treatment Plant Performance Evaluation Work Plan (Rev. #1)
November 28, 1993	USEPA Conditional Approval of TPPEWP
December 1, 1993	Commence Treatment Plant Performance Evaluation
December 9, 1993	Complete Treatment Plant Performance Evaluation
December 10, 1993	Submit monthly progress report
December 17, 1993	Submit Removal Action Work Plan (Rev #0) to USEPA
January 3, 1994	USEPA Approval of TPPEWP (Rev #1)
January 10, 1994	Submit monthly progress report
January 15, 1994	Complete Treatment Plant Data Analysis and Evaluation
January 17, 1994	Notify EPA of inability of Treatment Plant to meet proposed discharge criteria. Commence preparation of Treatment Plant Modifications Work Plan (TPMWP)
January 24, 1994	USEPA disapproval of Removal Action Work Plan (Rev. #0) and associated comments
February 4, 1994	Submit Revised Removal Action Work Plan (Rev #1) and Response to Agency comments
February 10, 1994	Submit monthly progress report
February 11, 1994	Submit Treatment Plant Performance Evaluation Report (TPPER)
March 2, 1994	Submit Treatment Plant Modifications Work Plan (TPMWP, Rev. #0)
March 10, 1994	Submit monthly progress report
April 10, 1994	Submit monthly progress report
April 13, 1994	Submit Revised Removal Action Work Plan (Rev #2) and Response to Agency comments
April 20, 1994	Submit Revised TPMWP (Rev #1) and Response to Agency comments
May 10, 1994	Submit monthly progress report
May 13, 1994	Submit Updates (Rev #3) to Removal Action Work Plan (Rev #2) and Response to Agency comments
May 25, 1994	USEPA approval of Revised RA Work Plan (Rev #2). Commence work on Work Plan implementation
May 25, 1994	Commence Preparation of Removal Action WP Addendum
June 1, 1994	Receipt of USEPA approval of Revised RA Work Plan (Rev #3)
June 10, 1994	Submit monthly progress report
June 24, 1994	Submit TPMWP (Rev #2)
July 10, 1994	Submit monthly progress report
July 26, 1994	Submit Treatment Plant Modifications Design Technical Memorandum (TPMDTM, Rev #0)
July 28, 1994	Receipt of USEPA approval of TPMWP (Rev #2 with revised Table 4)
August 10, 1994	Submit monthly progress report
August 30, 1994	Submit Removal Action Work Plan Addendum (RAWPA)
September 10, 1994	Submit monthly progress report

Date	Task/Activity/Deliverable/Milestone
September 23, 1994	Receipt of USEPA Comments or TPMDTM
October 3, 1994	Submit TPMDTM (Rev #1)
October 4, 1994	Submit TPMDTM (Rev #1)
October 10, 1994	Submit monthly progress report
November 9, 1994	Submit TPMDM (Rev #2)
November 10, 1994	Submit monthly progress report
December 1, 1994	Receipt of USEPA approval of TPMDTM (Rev #2)
December 10, 1994	Submit monthly progress report
December 12-19, 1994	RAWPA Extraction Well and Piezometer Installation
January 10, 1995	Submit monthly progress report
January/February/ March, 1995	Construction of TPMWP/TPMDTM measures
February 10, 1995	Submit monthly progress report
March 10, 1995	Submit monthly progress report
March 13-16, 1995	Performance of Field Pumping Tests (E4 and S7)
April 10, 1995	Submit monthly progress report
April 24, 1995	Submit status report on RAWPA, Task 5
May 4, 1995	Start on-site treatment plant
May 10, 1995	Submit monthly progress report
June 10, 1995	Submit monthly progress report
July 10, 1995	Submit monthly progress report
July 21, 1995	Submit treatment plant 1 <sup>st</sup> month operation summary report
July 26, 1995	Submit Cone penetrometer testing report and additional investigation plan
August 10, 1995	Submit monthly progress report
September 10, 1995	Submit monthly progress report
October 10, 1995	Submit monthly progress report
November 10, 1995	Submit monthly progress report
December 10, 1995	Submit monthly progress report
January 8-12, 1996	Conduct 2 <sup>nd</sup> Round of cone penetrometer testing on site
January 10, 1996	Submit monthly progress report
February 10, 1996	Submit monthly progress report
March 10, 1996	Submit monthly progress report
April 10, 1996	Submit monthly progress report
April 18, 1996	Discontinue Outfall Discharge
April 24, 1996	Agency Meeting – Discuss CPT results and future action plan
May 10, 1996	Submit monthly progress report
May 23, 1996	Submit 1996 IRM Seep Investigation and Fabric Barrier Work Plan
June 10, 1996	Submit monthly progress report
July 8-12, 1996	Install Piezometers and modify fabric barriers
July 10, 1996	Submit monthly progress report
August 6, 1996	Submit monthly progress report
September 10, 1996	Submit monthly progress report
October 10, 1996	Submit monthly progress report

Date	Task/Activity/Deliverable/Milestone
November 10, 1996	Submit monthly progress report
December 10, 1996	Submit monthly progress report
January 10, 1997	Submit monthly progress report
February 10, 1997	Submit monthly progress report
March 10, 1997	Submit monthly progress report
April 10, 1997	Submit monthly progress report
May 9, 1997	Submit monthly progress report
May 13, 1997	Sample seep piezometers
June 9, 1997	Submit monthly progress report
July 8, 1997	Submit monthly progress report
August 8, 1997	Submit monthly progress report
September 10, 1997	Submit monthly progress report
October 10, 1997	Submit monthly progress report
November 10, 1997	Submit monthly progress report
December 10, 1997	Submit monthly progress report
January 9, 1998	Submit monthly progress report
February 10, 1998	Submit monthly progress report
March 10, 1998	Submit monthly progress report
April 8, 1998	Submit monthly progress report
May 7, 1998	Submit monthly progress report
June 9, 1998	Submit monthly progress report
June 30, 1998	Sample Seep Sheen
July 10, 1998	Submit monthly progress report
August 7, 1998	Submit monthly progress report
August 19, 1998	Install 1 new fabric barrier and remove 1 old one
September 10, 1998	Submit monthly progress report
October 9, 1998	Submit monthly progress report
November 10, 1998	Submit monthly progress report
December 10, 1998	Submit monthly progress report
January 8, 1999	Submit monthly progress report
February 10, 1999	Submit monthly progress report
March 9, 1999	Submit monthly progress report
April 9, 1999	Submit monthly progress report
May 10, 1999	Submit monthly progress report
June 9, 1999	Submit monthly progress report
July 9, 1999	Submit monthly progress report
August 9, 1999	Submit monthly progress report
September 10, 1999	Submit monthly progress report
October 8, 1999	Submit monthly progress report
November 8, 1999	Submit monthly progress report
December 9, 1999	Submit monthly progress report
January 10, 2000	Submit monthly progress report
February 10, 2000	Submit monthly progress report

Date	Task/Activity/Deliverable/Milestone
March 8, 2000	Submit monthly progress report
April 4, 2000	Submit monthly progress report
May 10, 2000	Submit monthly progress report
June 8, 2000	Submit monthly progress report
July 7, 2000	Submit monthly progress report
August 8, 2000	Submit monthly progress report
September 8, 2000	Submit monthly progress report
October 4, 2000	Submit monthly progress report
November 3, 2000	Submit monthly progress report
December 8, 2000	Submit monthly progress report
January 4, 2001	Submit monthly progress report
February 6, 2001	Submit monthly progress report
March 8, 2001	Submit monthly progress report
April 9, 2001	Submit monthly progress report
May 8, 2001	Submit monthly progress report
June 6, 2001	Submit monthly progress report
July 6, 2001	Submit monthly progress report
August 7, 2001	Submit monthly progress report
September 10, 2001	Submit monthly progress report
October 5, 2001	Submit monthly progress report
November 7, 2001	Submit monthly progress report
December 7, 2001	Submit monthly progress report
January 9, 2002	Submit monthly progress report
February 8, 2002	Submit monthly progress report
March 5, 2002	Submit monthly progress report
April 5, 2002	Submit monthly progress report
May 8, 2002	Submit monthly progress report
June 5, 2002	Submit monthly progress report
July 8, 2002	Submit monthly progress report
August 9, 2002	Submit monthly progress report
September 10, 2002	Submit monthly progress report
October 10, 2002	Submit monthly progress report
November 6, 2002	Submit monthly progress report
December 10, 2002	Submit monthly progress report
January 9, 2003	Submit monthly progress report
February 7, 2003	Submit monthly progress report
March 19, 2003	Submit monthly progress report
April 7, 2003	Submit monthly progress report
May 7, 2003	Submit monthly progress report
June 10, 2003	Submit monthly progress report
July 8, 2003	Submit monthly progress report
August 8, 2003	Submit monthly progress report
September 5, 2003	Submit monthly progress report
October 8, 2003	Submit monthly progress report
November 10, 2003	Submit monthly progress report
December 8, 2003	Submit monthly progress report
January 9, 2004	Submit monthly progress report
February 6, 2004	Submit monthly progress report
March 15, 2004	Submit monthly progress report
April 7, 2004	Submit monthly progress report

**ATTACHMENT 1**  
**RESULTS OF MONTHLY SITE INSPECTION**  
**NEASE CHEMICAL SITE, SALEM, OHIO**  
**MARCH 2004**



**SITE INSPECTION FORM**  
**RUETGERS-NEASE CORPORATION**  
**Nease Site, Salem, Ohio**

Date of Inspection: 3-29-04

Entry Time: 1100 Hrs Exit Time: 1400 Hrs.

Weather: WARM + SUNNY 70°

Inspector's Name: DENNIS L. LANE

Inspector's Company: Howells and Baird, Inc.

**INSPECTION RESULTS**

SPECIFIC OBSERVATIONS: Structures

(Responses: S = Satisfactory U = Unsatisfactory Yes/No Levels Measured in Feet, N/A = Not Applicable)

	Pump	Quick-Connect	Water Level	Berm Erosion	Visible Leakage
Leachate Collection System 1 (LCS-1)	S	S	6.52	N/A	No
Leachate Collection System 2 (LCS-2)	S	S	9.43	N/A	No
Pond 1 Pumphouse	S	S	8.45	N/A	No
Pond 1 Berm	N/A	N/A	N/A	No	No
Pond 2 Embankment	N/A	N/A	N/A	No	No
Exclusion Area A Embankment	N/A	N/A	N/A	No	No
Storage Tank	N/A	S	5.32	N/A	No
Other (specify)					

## SPECIFIC OBSERVATIONS:

## Sediment Barriers

## Condition of Sediment Barriers

Barrier ID	Fabric Intact?	By Passing Evident?	Is Maintenance Necessary?
Sediment Control Structure 1	YES	No	No
Sediment Control Structure 2	YES	No	No
Fabric Barrier 2	YES	No	No
Fabric Barrier 3	YES	No	No
Fabric Barrier 4	YES	No	No
Fabric Barrier 5	YES	No	No
Fabric Barrier 8	YES	No	No
Fabric Barrier 9	YES	No	No
Fabric Barrier 10	YES	No	No
Rock Barrier 1	YES	No	No
Rock Barrier 2	YES	No	No
Pond 7 - North	YES	No	No
Pond 7 - South	YES	No	No

## SPECIFIC OBSERVATIONS:

Seeps (if present, use more forms, as necessary)

Seep ID (yr-month-#)	Located on Map	Areal Extent (ft <sup>2</sup> )	Magnitude (flow?, ponding?)
94-7-1	YES	20	Non-Flowing Seep
96-8-2	YES	20	Non-Flowing Seep

Note: Seep ID # equal the "nth" observed seep during the yr-month in question

## ADDITIONAL OBSERVATION OR REMARKS:

Inspector's Name: DENNIS L. LANEInspector's Signature: Dennis L. LaneDate: 3-29-04

CRANE-DEMING COMPANY.

CRANE  
DEMING  
SWAMP

96-8-2

S13

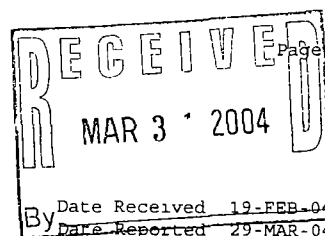
94-1-1

S1



**ATTACHMENT 2**

**WATER/AIR SAMPLING RESULTS – FEBRUARY 18, 2004  
NEASE CHEMICAL SITE, SALEM, OHIO**



RUTGERS ORGANICS CORPORATION  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
Account Number. 155

Contact RAINER DOMALSKI

Invoice Number 32987

Date Collected. 18-FEB-04

Client ID. INFLUENT 2-18-04

Lab ID. L35593-1

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
PESTICIDE ANALYSIS						
KEPONE	ug/L	U 042	042	SOP 6.2	15-MAR-04	CP
PHOTOMIREX	ug/L	U .006	006	SOP 6.2	15-MAR-04	CP
MIREX	ug/L	.26	002	SOP 6.2	15-MAR-04	CP
PH	PH UNITS	6.88	0	EPA 150.1	20-FEB-04	JPB
TOTAL DISSOLVED SOLIDS	mg/L	527	10	EPA 160.1	26-FEB-04	STL
TOTAL SUSPENDED SOLIDS	mg/L	56.4	4	EPA 160.2	26-FEB-04	STL

Comments <none>

Submitted by  
Exygen Research  
Reviewed and Approved by:

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Laboratory Manager  
3058 Research Drive  
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RUTGERS ORGANICS CORPORATION  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
Account Number 155

Contact: RAINER DOMALSKI

Date Received 19-FEB-04

Date Reported 29-MAR-04

Invoice Number 32987

Date Collected 18-FEB-04

Client ID: LGAC 2-3-2-18-04

Lab ID: L35593-2

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
<b>ESTICIDE ANALYSIS</b>						
EPONE	ug/L	U .042	.042	SOP 6.2	15-MAR-04	CP
OTOMIREX	ug/L	U .006	.006	SOP 6.2	15-MAR-04	CP
IREX	ug/L	U .002	.002	SOP 6.2	15-MAR-04	CP
H	PH UNITS	8.38	0	EPA 150.1	20-FEB-04	JPB
TOTAL DISSOLVED SOLIDS	mg/L	516	10	EPA 160.1	26-FEB-04	STL
TOTAL SUSPENDED SOLIDS	mg/L	< 4	4	EPA 160.2	26-FEB-04	STL
<b>OLATILE ANALYSIS</b>						
INYL CHLORIDE	ug/L	< 10	10	EPA 8260B	03-MAR-04	JEG
ICHLOROMETHANE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
,1-DICHLOROETHENE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
IS-1,2-DICHLOROETHENE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
RANS-1,2-DICHLOROETHENE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
HLOROFORM	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
,2-DICHLOROETHANE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
,1,1-TRICHLOROETHANE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
,1,2,2-TETRACHLOROETHANE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
,2-DICHLOROPROPANE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
RICHLOROETHENE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
ENZENE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
ETRACHLOROETHENE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
OLUENE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
HLOROBENZENE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
THYLBENZENE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
,P-XYLENE	ug/L	< 10	10	EPA 8260B	03-MAR-04	JEG
-XYLENE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
CETONE	ug/L	< 10	10	EPA 8260B	03-MAR-04	JEG
-BUTANONE	ug/L	< 10	10	EPA 8260B	03-MAR-04	JEG
HLOROMETHANE	ug/L	< 10	10	EPA 8260B	03-MAR-04	JEG
IS-1,3-DICHLOROPROPENE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
RANS-1,3-DICHLOROPROPENE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG

RUTGERS ORGANICS CORPORATION  
201 STRUBLE ROAD  
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Date Collected 18-FEB-04

Client ID: LGAC 2-3-2-18-04

Lab ID: L35593-2

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
BROMOFORM	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
DIBROMOCHLOROMETHANE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
BROMODICHLOROMETHANE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
CARBON TETRACHLORIDE	ug/L	< 5	5	EPA 8260B	03-MAR-04	JEG
BROMOMETHANE	ug/L	< 10	10	EPA 8260B	03-MAR-04	JEG

Comments: <none>

Submitted by  
Exygen Research  
Reviewed and Approved by



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RUTGERS ORGANICS CORPORATION  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
Account Number 155

Contact RAINER DOMALSKI

Date Received: 19-FEB-04

Date Reported: 29-MAR-04

Invoice Number 32987

Date Collected 18-FEB-04

Client ID: OUTFALL 2-18-04

Lab ID: L35593-3

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
SILVER-LOW LEVEL	mg/L	< 0003	0003	EPA 200.8	27-FEB-04	JMS
ALUMINUM-LOW LEVEL	mg/L	0293	0.0005	EPA 200.8	27-FEB-04	JMS
ARSENIC-LOW LEVEL	mg/L	0.0162	0003	EPA 200.8	27-FEB-04	JMS
BERYLLIUM-LOW LEVEL	mg/L	< 0.0004	0004	EPA 200.8	27-FEB-04	JMS
BOD-5 DAY	mg/L	< 2	2	SM 5210	20-FEB-04	TGA
CADMIUM-LOW LEVEL	mg/L	< 0003	0003	EPA 200.8	27-FEB-04	JMS
CYANIDE-FREE	mg/L	< 005	005	EPA 335.4	01-MAR-04	JPB
CHLORIDE	mg/L	20.6	10	EPA 410.4	26-FEB-04	STL
CHROMIUM-LOW LEVEL	mg/L	< 0006	0006	EPA 200.8	27-FEB-04	JMS
COPPER-LOW LEVEL	mg/L	0.00164	001	EPA 200.8	27-FEB-04	JMS
COPPER-LOW LEVEL	mg/L	0.568	0005	EPA 200.8	27-FEB-04	JMS
MERCURY	mg/L	< 0.0002	0.0002	EPA 7470A	01-MAR-04	STL
ESTICIDE ANALYSIS						
EPONE	ug/L	U 042	0.042	SOP 6.2	15-MAR-04	CP
HOTOMIREX	ug/L	U 006	006	SOP 6.2	15-MAR-04	CP
IREX	ug/L	U 002	0.002	SOP 6.2	15-MAR-04	CP
AMMONIA	mg/L	0.82	1	EPA 350.1	02-MAR-04	STL
ICKEL-LOW LEVEL	mg/L	0.00355	0.0006	EPA 200.8	27-FEB-04	JMS
IL & GREASE	mg/L	< 8.8	8.8	EPA 1664A	08-MAR-04	STL



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Client ID: OUTFALL 2-18-04

Lab ID L35593-3

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
LEAD-LOW LEVEL	mg/L	.000575	0003	EPA 200.8	27-FEB-04	JMS
PESTICIDE/PCB ANALYSIS GAMMA-BHC	ug/L	< .02	02	EPA 8081	04-MAR-04	CAK
PH	PH UNITS	8.37	0	EPA 150.1	20-FEB-04	JPB
ANTIMONY-LOW LEVEL	mg/L	.000646	0004	EPA 200.8	27-FEB-04	JMS
SEMI-VOLATILE ANALYSIS						
ANTHRACENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
BENZO (A) ANTHRACENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
BENZO (K) FLUORANTHENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
3,4-BENZOFUORANTHENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
BENZO (B) FLUORANTHENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
BENZO (G, H, I) PERYLENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
BENZO (A) PYRENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
CHRYSENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
DIBENZ (A, H) ANTHRACENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
FLUORENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
INDENO (1,2,3-CD) PYRENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
NAPHTHALENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
PHENANTHRENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
PYRENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
PHENOL	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
4-METHYLPHENOL	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
1,3-DICHLOROBENZENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
1,4-DICHLOROBENZENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
1,2-DICHLOROBENZENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
DIMETHYL PHTHALATE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
BUTYLBENZYL PHTHALATE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
DI-N-BUTYL PHTHALATE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
2-METHYLNAPHTHALENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
3,4-DICHLORONITROBENZENE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP
DIPHENYL SULFONE	ug/L	< 10	10	EPA 8270C	03-MAR-04	CP

ab ID: L35593-3

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RUTGERS ORGANICS CORPORATION  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
Account Number 155  
Contact RAINER DOMALSKI

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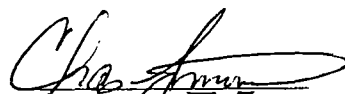
Client ID: OUTFALL 2-18-04

Lab ID L35593-3

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
BROMOMETHANE	ug/L	< 10	10	EPA 8260B	03-MAR-04	JEG
ZINC-LOW LEVEL	mg/L	00451	0005	EPA 200.8	27-FEB-04	JMS

Comments: <none>

Submitted by  
Exygen Research  
Reviewed and Approved by



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RUTGERS ORGANICS CORPORATION/EHS DEPT  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
ACCOUNT. 155

Date Received 18-Feb-04  
Date Reported 4-Mar-04

Invoice Number 32987

Contact. RAINER DOMALSKI

Date Collected 18-Feb-04

Client ID AGAC-1-2-2-18-04

Lab ID L35593-5

PARAMETER		UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
VOLATILE ANALYSIS							
BROMODICHLOROMETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
BROMOFORM	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
DIBROMOCHLOROMETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
DIBROMOMETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
TRANS-1, 2-DICHLOROETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
CUMENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
N- PROPYLBENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
1, 2, 3-TRICHLOROPROPANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
DICHLORODIFLUOROMETHANE	ppb (v/v)	< 2	2	EPA-19 TO-14	25-Feb-04	STL	
VINYL CHLORIDE	ppb (v/v)	< 2	2	EPA-19 TO-14	25-Feb-04	STL	
CHLOROETHANE	ppb (v/v)	< 2	2	EPA-19 TO-14	25-Feb-04	STL	
TRICHLOROFUOROMETHANE	ppb (v/v)	< 2	2	EPA-19 TO-14	25-Feb-04	STL	
1, 1-DICHLOROETHENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
1, 1-DICHLOROETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
CIS-1, 2-DICHLOROETHENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
CHLOROFORM	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
1, 1, 1-TRICHLOROETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
CARBON TETRACHLORIDE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
BENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
1, 2-DICHLOROETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
TRICHLOROETHENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
1, 2-DICHLOROPROPANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
CIS-1, 3-DICHLOROPROPENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
TOLUENE	ppb (v/v)	5.8	1	EPA-19 TO-14	25-Feb-04	STL	
TRANS-1, 3-DICHLOROPROPENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
1, 1, 2-TRICHLOROETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
TETRACHLOROETHENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
1, 2-DIBROMOETHANE (EDB)	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
CHLOROBENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
ETHYLBENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
M, P-XYLENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
O-XYLENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	
STYRENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL	

RUTGERS ORGANICS CORPORATION/EHS DEPT  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
ACCOUNT 155

Contact RAINER DOMALSKI

Date Received. 18-Feb-04

Date Reported 4-Mar-04

Invoice Number. 32987


Date Collected. 18-Feb-04

Client ID. AGAC-1-2-2-18-04

Lab ID L35593-5

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
1,1,2,2-TETRACHLOROETHANE	ppb (v/v)	2.4	1	EPA-19 TO-14	25-Feb-04	STL
1,3,5-TRIMETHYLBENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
1,3-DICHLOROBENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
1,4-DICHLOROBENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
1,2-DICHLOROBENZENE	ppb (v/v)	2.0	1	EPA-19 TO-14	25-Feb-04	STL

Submitted by  
Exygen Research  
Reviewed and Approved by:

  
Charles Simon  
Laboratory Manager

RUTGERS ORGANICS CORPORATION/EHS DEPT.  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
ACCOUNT 155

Contact RAINER DOMALSKI

Client ID. AGAC-1-2-2-18-04

Lab ID L35593-5

Date Received 18-Feb-04

Date Reported. 4-Mar-04

Invoice Number. 32987


Date Collected. 18-Feb-04

### MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	UNITS	ESTIMATED RESULT	RETENTION TIME	TEST METHOD	TEST DATE	ANALYST
UNKNOWN	ppb (v/v)	1 9 NJ	M 4 6583	EPA-19 TO-14	25-Feb-04	STL
UNKNOWN	ppb (v/v)	12 NJ	M 4 7798	EPA-19 TO-14	25-Feb-04	STL
ETHANOL	ppb (v/v)	2 4 NJ	M 5.5867	EPA-19 TO-14	25-Feb-04	STL
BUTANE, 2-METHYL-	ppb (v/v)	5 8 NJ	M 5 9077	EPA-19 TO-14	25-Feb-04	STL
UNKNOWN	ppb (v/v)	4.6 NJ	M 6 2287	EPA-19 TO-14	25-Feb-04	STL
UNKNOWN	ppb (v/v)	5 5 NJ	M 6 4022	EPA-19 TO-14	25-Feb-04	STL
METHYLENE CHLORIDE	ppb (v/v)	9.5 NJ	M 7 3132	EPA-19 TO-14	25-Feb-04	STL
UNKNOWN	ppb (v/v)	5 4 NJ	M 9 8206	EPA-19 TO-14	25-Feb-04	STL
BENZENE, 1,2,4-TRIMETHYL-	ppb (v/v)	2 9 NJ	M 19 295	EPA-19 TO-14	25-Feb-04	STL

M. Result was measured against nearest internal standard assuming a response factor of 1.

Submitted by  
Exygen Research  
Reviewed and Approved by

  
Charles Simons  
Laboratory Manager

RUTGERS ORGANICS CORPORATION/EHS DEPT.  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
ACCOUNT 155

Date Received: 18-Feb-04

Date Reported: 4-Mar-04

Invoice Number: 32987

Contact: RAINER DOMALSKI

Date Collected: 18-Feb-04

Client ID AGAC-F-2-18-04

Lab ID. L35593-6

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
<b>VOLATILE ANALYSIS</b>						
BROMODICHLOROMETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
BROMOFORM	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
DIBROMOCHLOROMETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
DIBROMOMETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
TRANS-1,2-DICHLOROETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
CUMENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
N-PROPYLBENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
1,2,3-TRICHLOROPROPANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
DICHLORODIFLUOROMETHANE	ppb (v/v)	< 2	2	EPA-19 TO-14	25-Feb-04	STL
VINYL CHLORIDE	ppb (v/v)	36	2	EPA-19 TO-14	25-Feb-04	STL
CHLOROETHANE	ppb (v/v)	< 2	2	EPA-19 TO-14	25-Feb-04	STL
TRICHLOROFLUOROMETHANE	ppb (v/v)	< 2	2	EPA-19 TO-14	25-Feb-04	STL
1,1-DICHLOROETHENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
1,1-DICHLOROETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
CIS-1,2-DICHLOROETHENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
CHLOROFORM	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
1,1,1-TRICHLOROETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
CARBON TETRACHLORIDE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
BENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
1,2-DICHLOROETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
TRICHLOROETHENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
1,2-DICHLOROPROPANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
CIS-1,3-DICHLOROPROPENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
TOLUENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
TRANS-1,3-DICHLOROPROPENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
1,1,2-TRICHLOROETHANE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
TETRACHLOROETHENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
1,2-DIBROMOETHANE (EDB)	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
CHLOROBENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
ETHYLBENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
M, P-XYLENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
O-XYLENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
STYRENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL



RUTGERS ORGANICS CORPORATION/EHS DEPT  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
ACCOUNT 155

Date Received. 18-Feb-04  
Date Reported. 4-Mar-04

Invoice Number 32987

Contact. RAINER DOMALSKI

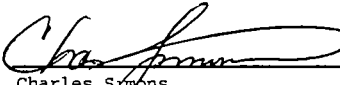
Date Collected: 18-Feb-04

Client ID AGAC-F-2-18-04

Lab ID L35593-6

PARAMETER	UNITS	RESULT	LIMIT OF			
			QUANTITATION	TEST METHOD	TEST DATE	ANALYST
1,1,2,2-TETRACHLOROETHANE	ppb (v/v)	6 7	1	EPA-19 TO-14	25-Feb-04	STL
1,3,5-TRIMETHYLBENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
1,3-DICHLOROBENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
1,4-DICHLOROBENZENE	ppb (v/v)	< 1	1	EPA-19 TO-14	25-Feb-04	STL
1,2-DICHLOROBENZENE	ppb (v/v)	1 3	1	EPA-19 TO-14	25-Feb-04	STL

Submitted by  
Exygen Research  
Reviewed and Approved by

  
Charles Simons  
Laboratory Manager

RUTGERS ORGANICS CORPORATION/EHS DEPT  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
ACCOUNT 155

Contact RAINER DOMALSKI

Date Received 18-Feb-04

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Client ID AGAC-F-2-18-04

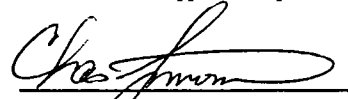
Lab ID L35593-6

### MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	UNITS	ESTIMATED RESULT	RETENTION TIME	TEST METHOD	TEST DATE	ANALYST
NONE	-	-	-	EPA-19 TO-14	25-Feb-04	STL

M Result was measured against nearest internal standard assuming a response factor of 1

Submitted by  
Exygen Research  
Reviewed and Approved by:

  
Charles Simons  
Laboratory Manager

## NARRATIVE

Exygen Research (PADEP ID# 14-347)

Project: L35593

### Sample Receipt:

Samples were received on February 19, 2004. The samples were received in two sample coolers at 0.9°C and 1.1°C.

### Sample Analysis:

There were no problems related to the analysis of these samples.

### Holding Times:

All samples were analyzed within holding times.

### Sub-contract Laboratories:

Todd Giddings and Associates of State College, PA (PADEP ID# 14-321) performed the BOD analysis on these samples.

Severn Trent Laboratories (STL) of Pittsburgh, PA (PADEP ID# 02-416) performed the COD, total organic carbon, total suspended solids, total dissolved solids, mercury, ammonia nitrogen, and oil and grease analysis.

Severn Trent Laboratories (STL) of Knoxville, TN (PADEP ID# 68-576) performed the GC/MS volatiles (air) analysis.

**ATTACHMENT 3**

**WATER/AIR SAMPLING RESULTS – MARCH 3, 2004  
NEASE CHEMICAL SITE, SALEM, OHIO**

RUTGERS ORGANICS CORPORATION  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
Account Number 155

Contact RAINER DOMALSKI

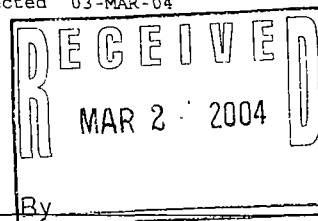
Date Received 04-MAR-04  
Date Reported 21-MAR-04

Invoice Number 32987

Date Collected 03-MAR-04

Client ID INFLUENT 3-3-04

Lab ID L35618-1



PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
AMMONIA	mg/L	81	.1	EPA 350.1	15-MAR-04	STL
NITRATE+NITRITE	mg/L	< 1	1	EPA 353 2	18-MAR-04	STL
PHOSPHORUS	mg/L	< .1	1	EPA 365 2	16-MAR-04	STL

Comments. <none>

Submitted by  
Exygen Research  
Reviewed and Approved by

Charles Simons  
Laboratory Manager, 3058 Research Drive  
State College, PA 16801, USA

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F 814.231.1580  
exygen.com

RUTGERS ORGANICS CORPORATION  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
Account Number 155  
  
Contact RAINER DOMALSKI

Date Received 04-MAR-04  
Date Reported 21-MAR-04  
  
Invoice Number 32987  
  
Date Collected 03-MAR-04

Client ID: OUTFALL 3-3-04

Lab ID: L35618-2

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
AMMONIA	mg/L	65	.1	EPA 350 1	15-MAR-04	STL
NITRATE+NITRITE	mg/L	< 1	.1	EPA 353.2	18-MAR-04	STL
PHOSPHORUS	mg/L	.15	1	EPA 365 2	16-MAR-04	STL

Comments: <none>

Submitted by  
Exygen Research  
Reviewed and Approved by



Charles Simons  
Laboratory Manager  
3058 Research Drive  
State College, PA 16801, USA

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exygen.com

## NARRATIVE

Exygen Research (PADEP ID# 14-347)

Project: L35618

### Sample Receipt:

Samples were received on March 4, 2004. The samples were received in one sample cooler at 1.5°C.

### Sample Analysis:

There were no problems related to the analysis of these samples.

### Holding Times:

The samples were analyzed within holding time.

### Sub-contract Laboratories:

Severn Trent Laboratories (STL) of Pittsburgh, PA (PADEP ID# 02-416) performed the ammonia nitrogen analysis on these samples. Severn Trent Laboratories (STL) of North Canton, OH (PADEP ID# 68-340) performed the phosphorus analysis on these samples.

RUTGERS ORGANICS CORPORATION  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
Account Number 155  
  
Contact: RAINER DOMALSKI

Date Received 04-MAR-04  
Date Reported: 21-MAR-04  
  
Invoice Number: 32987  
  
Date Collected: 03-MAR-04

Client ID INFLUENT 3-3-04

Lab ID: L35618-1

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
AMMONIA	mg/L	.81	1	EPA 350 1	15-MAR-04	STL
NITRATE+NITRITE	mg/L	< 1	.1	EPA 353 2	18-MAR-04	STL
PHOSPHORUS	mg/L	< .1	1	EPA 365 2	16-MAR-04	STL

Comments: <none>

Submitted by  
Exygen Research  
Reviewed and Approved by:



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RUTGERS ORGANICS CORPORATION  
201 STRUBLE ROAD  
STATE COLLEGE, PA 16801  
Account Number 155

Contact RAINER DOMALSKI

Date Received 04-MAR-04

Date Reported 21-MAR-04

Invoice Number 32987

Date Collected 03-MAR-04

Client ID OUTFALL 3-3-04

Lab ID L35618-2

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
AMMONIA	mg/L	65	1	EPA 350.1	15-MAR-04	STL
NITRATE+NITRITE	mg/L	< .1	.1	EPA 353.2	18-MAR-04	STL
PHOSPHORUS	mg/L	15	1	EPA 365.2	16-MAR-04	STL

Comments: <none>

Submitted by  
Exygen Research  
Reviewed and Approved by:



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exygen.com

## NARRATIVE

Exygen Research (PADEP ID# 14-347)  
Project: L35618

### Sample Receipt:

Samples were received on March 4, 2004. The samples were received in one sample cooler at 1.5°C.

### Sample Analysis:

There were no problems related to the analysis of these samples.

### Holding Times:

The samples were analyzed within holding time.

### Sub-contract Laboratories:

Severn Trent Laboratories (STL) of Pittsburgh, PA (PADEP ID# 02-416) performed the ammonia nitrogen analysis on these samples. Severn Trent Laboratories (STL) of North Canton, OH (PADEP ID# 68-340) performed the phosphorus analysis on these samples.

**ATTACHMENT 4**

**TWO ACUTE TOXICITY EVALUATIONS – FEBRUARY 17-21, 2004  
NEASE CHEMICAL SITE, SALEM, OHIO**

RESULTS OF TWO ACUTE TOXICITY EVALUATIONS OF  
RUTGERS ORGANICS CORPORATION,  
SALEM SITE LAGOON WATER TREATMENT PLANT  
FINAL EFFLUENT

AAT JOB # 51 - 01 – 68

17 February – 21 February 2004

Report Prepared for:

Rutgers Organics Corporation  
201 Struble Road  
State College, Pennsylvania 16801

Report Prepared by:

AMERICAN AQUATIC TESTING, INC.  
890 NORTH GRAHAM STREET  
ALLENTOWN, PENNSYLVANIA 18109

## INTRODUCTION

A set of two static acute toxicity tests were conducted with larval fathead minnows, *Pimephales promelas* (*P. promelas*) and the freshwater cladoceran, *Ceriodaphnia dubia* (*C. dubia*) to determine the relative toxicity of final effluent from the Rutgers Organics Corporation Lagoon Water Treatment Plant, Salem, Ohio. The 96-hour static fathead acute toxicity test and the 48-hour static *C. dubia* acute toxicity tests were conducted from 17 February to 21 February 2003. The toxicity evaluations were conducted by American Aquatic Testing, Inc., Allentown, Pennsylvania.

All tests were performed according to procedures outlined in Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, 4<sup>th</sup> Edition (EPA/600/4-90/027F) and Reporting and Testing Guidance for Biomonitoring Required by the Ohio Environmental Protection Agency, October 1991.

## MATERIALS

### TEST ORGANISMS                      Fathead Minnow, *Pimephales promelas*

Larval fathead minnows used in acute testing were obtained from in-house cultures maintained by ABS, Inc.. Test age organisms are maintained in shallow depth basins containing 10L of moderately hard reconstituted water and are fed newly hatched *Artemia* (brine shrimp) nauplii twice a day up until test initiation. The test organisms were 02 days old at test initiation. No acclimation of these test organisms was required as they were raised in moderately hard reconstituted water, which was used for testing.

### Freshwater Cladoceran, *Ceriodaphnia dubia*

Cladoceran neonates, *C. dubia* were obtained from AAT, Inc.'s in-house cultures. Cultures for generating test age (<24 hours old) neonates are maintained as single cultures in 30 mL soufflé cups containing 15 mL of moderately hard reconstituted water. These adults are transferred daily into fresh culture water and are fed a combination of a unicellular green alga (*Selenastrum capricornutum*) and a yeast/Cerophyll/trout chow (YCT) suspension. Broods released during a five hour period were pooled and used to initiate the acute toxicity test. No acclimation of these test organisms was required as they were raised in moderately hard reconstituted water, which was used for testing. Neonates were released between 0800 and 1300 of February 17, 2004.

### DILUTION WATER

Moderately hard reconstituted water was prepared in accordance to procedures outlined in EPA/600/4-90/027F and was used as dilution/control water for the toxicity tests. Deionized water (Specialty Filtration Products) and reagent grade chemicals were used to achieve the following concentrations: 96 mg/L of NaHCO<sub>3</sub>, 60.0 mg/L of MgSO<sub>4</sub> and 4.0 mg/L of KCl and 60.0 mg/L of CaSO<sub>4</sub> 2H<sub>2</sub>O.

### TEST MATERIAL

The material tested was final effluent collected by Howells and Baird personnel with a grab sampler placed at the outfall. One grab sample was collected for each of the two acute toxicity tests. The sample, collected February 16, 2004, was shipped overnight to AAT, Inc. in a cooler containing ice and was used to initiate testing on February 17, 2004. A Chain-of-Custody accompanied the sample. Tests were initiated prior to the expiration of the 36-hour holding time.

## METHODS

*P. promelas* larvae (02 day old) were exposed to the effluent sample for 96 hours under static, non-renewal conditions. Test organisms were exposed in groups of 10 in 1 L glass beakers containing 500 mL of test solution with two replicates per concentration (20 organisms per concentration). The test organisms were fed prior to test initiation and at 48 hours.

*C. dubia* neonates (<24 hours old) were exposed to the effluent sample for 48 hours under static non-renewal conditions. Test organisms were exposed in groups of five in 30 mL soufflé cups containing 15 mL of test solution with four replicates per concentration (20 organisms per concentration). The test organisms were not fed during the test exposure.

Both sets of test chambers were placed in randomized positions in a temperature controlled environment maintained at  $25 \pm 1$  ° C. The highest concentration used for exposure was 100 %. A 0.56 dilution schedule was used to prepare sample concentrations of 56%, 32%, 18% and 10%, by volume. A control sample consisting of 100 % dilution water was also tested.

Surviving test organisms were counted daily. Dead test organisms and debris were removed daily at this time. Temperature was measured daily in a surrogate replicate placed alongside the test chambers. Dissolved oxygen, pH and conductivity were measured in one replicate chamber at each concentration at the beginning and end of the test exposure. Alkalinity and hardness were measured in the control and the 100% concentration at the beginning of the test exposure. The lighting regime was 16 hours light, 08 hours dark.

## RESULTS

### FATHEAD MINNOW 96-HOUR ACUTE TEST RESULTS

As a result of less than 50 % mortality in any test concentration during the exposure period the acute data was evaluated visually. Therefore, the 96-hour  $LC_{50}$  is > 100%. This result yields an Acute Toxic Unit; TUa ( $100\%/LC_{50}$ ) of 1.0.

### CERIODAPHNIA DUBIA 48-HOUR ACUTE TEST RESULTS

As a result of less than 50 % mortality in any test concentration during the exposure period the acute data was evaluated visually. Therefore, the 48-hour  $LC_{50}$  is > 100%. This result yields an Acute Toxic Unit; TUa ( $100\%/LC_{50}$ ) of 1.0.

Table I. Fathead Minnow Mortality Data

CLIENT: Rutgers Organics Corp., Salem Lagoon Water Treatment Plant  
 TEST: 96-hour Definitive Acute Toxicity Test  
 DATE: 17 - 21 February 2004

Sample Type	% Effluent	# of Organisms	Cumulative number of organisms affected at				% Mortality*
			24 hr	48 hr	72 hr	96 hr	
Final Effluent	0	20	0	0	0	0	0
	10	20	0	0	0	0	0
	18	20	0	0	1	1	5
	32	20	0	0	0	0	0
	56	20	0	0	1	1	5
	100	20	0	0	0	0	0

\* Cumulative Percent Mortality at 96 hours

Table II. Fathead Minnow Physical/Chemical Measurements

CLIENT: Rutgers Organics Corp., Salem Lagoon Water Treatment Plant  
 TEST: 96-hour Definitive Acute Toxicity Test  
 DATE: 17 - 21 February 2004

Time	% Effluent by Volume					
	0	10	18	32	56	100
0 hour						
Conduct. $\mu$ mhos	271	308	345	403	511	702
D.O. ppm	7.8	7.8	7.7	7.6	7.5	7.2
Temp. °C A	25.0	25.0	25.0	25.0	25.0	25.0
B	25.0	25.0	25.0	25.0	25.0	25.0
pH Std .units	7.8	7.9	7.9	8.1	8.3	8.4
Alkalinity mg/L	60					100
Hardness mg/L	100					170
24 hours A	25.5	25.5	25.5	25.0	25.0	25.0
Temp. °C B	25.5	25.5	25.5	25.0	25.0	25.0
48 hours A	25.5	25.5	25.5	25.5	25.5	25.5
Temp. °C B	25.5	25.5	25.5	25.5	25.5	25.5
72 hours A	25.5	25.5	25.5	26.0	26.0	26.0
Temp. °C B	25.5	25.5	25.5	26.0	26.0	26.0
96 hours						
Conduct. $\mu$ mhos	349	393	427	503	644	918
D.O. ppm	7.3	7.3	7.3	7.3	7.3	7.3
pH Std .units	7.9	8.0	8.1	8.2	8.4	8.6
Temp. °C A	25.0	25.0	25.0	25.0	25.0	25.0
B	25.0	25.0	25.0	25.0	25.0	25.0

Table I. *Ceriodaphnia dubia* Mortality Data

CLIENT: Rutgers Organics Corp., Salem Lagoon Water Treatment Plant  
 TEST: 48 hour Definitive Acute Toxicity Test  
 DATE: 17-19 February 2004

Sample Type	% Effluent	# of Organisms	Cumulative number of organism affected at		% Mortality*
			24 hours	48 hours	
Final Effluent	0	20	0	0	0
	10	20	0	0	0
	18	20	0	0	0
	32	20	0	0	0
	56	20	0	0	0
	100	20	0	0	0

\* Cumulative Percent Mortality at 48 hours

Table II. *Ceriodaphnia dubia* Physical/Chemical Measurements

CLIENT: Rutgers Organics Corp., Salem Lagoon Water Treatment Plant  
 TEST: 48 hour Definitive Acute Toxicity Test  
 DATE: 17-19 February 2004

Time	% Effluent by Volume					
	0	10	18	32	56	100
0 hour						
Conduct. $\mu$ mhos	271	308	345	403	511	702
D.O. ppm	7.8	7.8	7.7	7.6	7.5	7.2
Temp. °C	25.0	25.0	25.0	25.0	25.0	25.0
pH Std .units	7.8	7.9	7.9	8.1	8.3	8.4
Alkalinity mg/L	60					100
Hardness mg/L	100					170
24 hours						
Temp. °C	25.5	25.5	25.5	25.0	25.0	25.0
48 hours						
Conduct. $\mu$ mhos	280	320	350	420	515	720
D.O. ppm	8.1	8.1	8.1	8.1	8.1	8.1
pH Std .units	8.4	8.4	8.4	8.4	8.5	8.7
Temp °C	25.0	25.0	25.0	25.0	25.0	25.0



## APPENDIX I

### RAW DATA

17 February – 21 February

RESULTS OF TWO ACUTE TOXICITY EVALUATIONS OF  
RUTGERS ORGANICS CORPORATION,  
SALEM SITE LAGOON WATER TREATMENT PLANT  
FINAL EFFLUENT

# Freshwater Acute Test

American Aquatic Testing, Inc.

Job #: 51-01-68

Start Date/Time: 2-17-04 1845

Species: P. promelas

End Date/Time: 2-21-04 1800

Dilution Water: EPA Mod. Hard

Test Type: 96hr. SNR

Concentration	Rep.	Live Count					Temperature (C)				
		0 hr.	24 hr.	48 hr.	72 hr.	96 hr.	0 hr.	24 hr.	48 hr.	72 hr.	96 hr.
Control	A	10	10	10	10	10	25.0	25.5	25.5	25.5	25.0
	B	10	10	10	10	10	25.0	25.5	25.5	25.5	25.0
10%	A	10	10	10	10	10	25.0	25.5	25.5	25.5	25.0
	B	10	10	10	10	10	25.0	25.5	25.5	25.5	25.0
18%	A	10	10	10	10	10	25.0	25.5	25.5	25.5	25.0
	B	10	10	10	9	9	25.0	25.5	25.5	25.5	25.0
32%	A	10	10	10	10	10	25.0	25.0	25.5	26.0	25.0
	B	10	10	10	10	10	25.0	25.0	25.5	26.0	25.0
56%	A	10	10	10	10	10	25.0	25.0	25.5	26.0	25.0
	B	10	10	10	9	9	25.0	25.0	25.5	26.0	25.0
100%	A	10	10	10	10	10	25.0	25.0	25.5	26.0	25.0
	B	10	10	10	10	10	25.0	25.0	25.5	26.0	25.0
Initials		MP	MP	MP	MP	MP	MP	MP	MP	MP	MP
Date		2/17	2/18	2/19	2/20	2/21	2/17	2/18	2/19	2/20	2/21

Concentration	pH		D.O. (mg/L)		Cond. (umhos)	
	0 hr.	96 hr.	0 hr.	96 hr.	0 hr.	96 hr.
Control	7.8	7.9	7.8	7.3	271	349
10%	7.9	8.0	7.8	7.3	308	393
18%	7.9	8.1	7.7	7.3	345	427
32%	8.1	8.2	7.6	7.3	403	503
56%	8.3	8.4	7.5	7.3	511	644
100%	8.4	8.6	7.2	7.3	702	918
Initials	MP	MP	MP	MP	MP	MP
Date	2/17	2/21	2/17	2/21	2/17	2/18

Concentration	Alkalinity (mg/L)	Hardness (mg/L)
Control	60	100
100%	30	170
Initials	MP	MP
Date	2/17	2/17

Observations:

# Freshwater Acute Test

American Aquatic Testing, Inc.

Job #: 51-01-68

Start Date/Time: 2-17-04 1500

Species: C. dubia

End Date/Time: 2-19-04 1500

Dilution Water: EPA Mod. Hard

Test Type: 48 hr. SNR

Conc. %	Temperature (C)		
	0 hr.	24 hr.	48 hr.
Control	25.0	25.5	25.0
10	25.0	25.5	25.0
18	25.0	25.5	25.0
32	25.0	25.0	25.0
56	25.0	25.0	25.0
100	25.0	25.0	25.0
Conc. %	pH (Stand units)		
	0 hr.		48 hr.
Control	7.8		8.4
10	7.9		8.4
18	7.9		8.4
32	8.1		8.4
56	8.3		8.5
100	8.4		8.7
Conc.	Dissolved Oxygen (mg/L)		
	0 hr.		48 hr.
Control	7.8		8.1
10	7.8		8.1
18	7.7		8.1
32	7.6		8.1
56	7.5		8.1
100	7.2		8.1
Conc.	Conductivity (umhos)		
	0 hr.		48 hr.
Control	271		280
10	308		320
18	345		350
32	403		420
56	511		515
100	702		720
Initials	mp	mp	mp
Date	2/17	2/18	2/19

Conc.	Alkalinity	Hardness
Control	60	100
100%	30	170
Initials	mp	mp
Date	2/17	2/17

Conc. %	Rep.	Live Count		
		0 hr.	24 hr.	48 hr.
Control	A	5	5	5
	B	5	5	5
	C	5	5	5
	D	5	5	5
10	A	5	5	5
	B	5	5	5
	C	5	5	5
	D	5	5	5
18	A	5	5	5
	B	5	5	5
	C	5	5	5
	D	5	5	5
32	A	5	5	5
	B	5	5	5
	C	5	5	5
	D	5	5	5
56	A	5	5	5
	B	5	5	5
	C	5	5	5
	D	5	5	5
100	A	5	5	5
	B	5	5	5
	C	5	5	5
	D	5	5	5
Initials		mp	mp	mp
Date		2/17	2/18	2/19

Observations:

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## CHAIN OF CUSTODY

**Disposal:** Lab disposal ☒

Samples were

1. Collected by AAT personnel ☐ 2. Transported on ice? ☐ 3. Received within holding time? ☐ 4. Sample matrix is: Liquid ☒ Sediment ☐  
Client personnel ☒ Yes ☒ No ☐ Yes ☒ No ☐ Soil ☐ Other ☐

[illegible]

# AMERICAN AQUATIC TESTING, INC.

1105 UNION BLVD.  
ALLENTOWN, PA 18103  
610 434 9015

Job #: 51-01-68

Client: Ruetgers Organics

Client Contact: Dennis Lane

Address: Salem Ohio

Phone #: (330) 332-4834

Sample Return to client ☐

Disposal: Lab disposal ☒

Initial Chemistry @ Laboratory							SAMPLE INFORMATION					Toxicity Testing Requested			
Sample #	Temp °C	Dis O <sub>2</sub>	pH	Alk. mg/L	Hard mg/L	Cl- mg/L	Sample Identification	Sample Type	Sample Volume	Sample Date	Sample Time	Acute	Chronic	Sediment	Other
02	5.0	2.3	8.4	190	380	0.00	OUTFALL 2-18-04	Grab	2 1/2 gal	2-18-04	1200	NO <sup>ef</sup>	X		

Samples were

1 Collected by AAT personnel  
Client personnel

☐ 2 Transported on ice?  
Yes ☒ No ☐

3. Received with in holding time?  
Yes ☐ No ☐

4. Sample matrix is: Liquid ☒ Sediment ☐  
Soil ☐ Other ☐

CUSTODY INFORMATION										Lab Use
Sample #	Relinquished by:	Received by:	Date	Time	Relinquished by:	Received for Lab:	Date	Time	ISTN#	
	D.L.L.	FEDEX	2-18-04	1500	FEDEX	M. E. Llop	2/19	1000	09/113	

Special Instructions:

## CHAIN OF CUSTODY

Job #: 51-01-68

Client: Rutgers Organics  
Address: Salem Ohio  
Phone #: (330) 332 - 4834

Client Contact: Dennis Lane

**Sample**      **Return to client**    ☐  
**Disposal:**    **Lab disposal**            ☒

[illegible]

1. Collected by AAT personnel ☐ 2. Transported on ice? ☐ 3. Received within holding time? ☐ 4. Sample matrix is: Liquid ☒ Sediment ☐  
Client personnel ☒ Yes ☒ No ☐ Yes ☐ No ☐ Soil ☐ Other ☐

[illegible]

APPENDIX II

OHIO EPA NPDES BIOMONITORING REPORT FORM

Date Created: 04/13/98  
Last Revised: 04/13/98

Page 1 of 6

OHIO EPA NPDES BIOMONITORING REPORT FORM

GENERAL INFORMATION

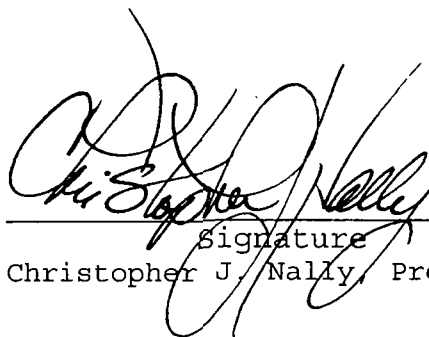
1. Facility Name: Rutgers Organics Corporation  
Reporting Date: 05 March 2004
2. Address: 1224 Benton Road  
Salem, Ohio 44460  
Substantive
3. Ohio EPA Permit Number: Discharge Criteria 4. Application (NPDES) No. \_\_\_\_\_
5. Facility Contact: Ralph Pearce 6. Phone No.: (800) 458-3434
7. Consultant/Testing Lab Name: American Aquatic testing, Inc.
8. Consultant/Lab Contact: Chris Nally 9. Phone No.: (610) 434-9015
10. Receiving Water(s) of Discharge: Unnamed Tributary of the Middle Fork of Middle Creek.

- 02/16/04
11. Outfall(s) Tested: 001

Average Daily Flows:  
on Day Sampled (gal/day)

12. Is your current Standard Operating Procedure (SOP) Manual on file with Ohio EPA? (Yes/No) No If yes, date submitted: \_\_\_\_\_. If no, an SOP that follows Ohio EPA and/or U.S. EPA protocols must be submitted as soon as possible in order to eliminate the need to include this information with every report.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

  
\_\_\_\_\_  
Signature  
Christopher J. Nally, President

03/15/04  
\_\_\_\_\_  
Date



## ACUTE TOXICITY TEST SAMPLING DATA

TABLE

Sampling Summary for Acute Toxicity Tests			
Sampling Location & Description	Sample Collection		Weather/Receiving Stream Conditions
	Beginning MM/DD/Time	Ending MM/DD/Time	
Final Effluent:	02/16/04 1100	N/A	
Outfall No.: _____	001		
Type (Grab/Composite):	Grab		
Volume Collected:	1.0-gallon		
Upstream Station:	N/A		
Waterbody:			
Station No.:			
Type (Grab/Composite):			
Volume Collected:			
Downstream Station (Near-field):	N/A		
Waterbody:			
Station No.:			
Type (Grab/Composite):			
Volume Collected:			
Additional Stations (If needed):	N/A		
Waterbody:			
Station No.:			
Type (Grab/Composite):			
Volume Collected:			
Waterbody:			
Station No.:			
Type (Grab/Composite):			
Volume Collected:			

## TOXICITY TEST CONDITIONS

TABLE

Summary of Toxicity Test Conditions	
1. Test Species and Age:	<i>Pimephales promelas</i> - 02 days old
2. Test Type and Duration:	96-hour Static Acute
3. Test Dates:	17 - 21 February 2004
4. Test Temperature (°C):	25.0°C ± 1.0°C
5. Light Quality:	50-100 ft. candles
6. Photoperiod:	16 hours light / 8 hours dark
7. Feeding Regime:	None
8. Size of Test Vessel:	1000 mL
9. Volume and Depth of Test Solutions:	500 mL / 92 mm
10. No. of Test Organisms per Test Vessel:	Ten
11. No. of Test Vessels per Test Solution:	Two
12. Total No. of Test Organisms per Test Solution:	20
13. Test Concentrations (as percent by volume effluent):	0, 10, 18, 32, 56, and 100%
14. Renewal of Test Solutions:	None
15. Dilution and Primary Control Water:	Moderately Hard Reconstituted Water
16. Secondary Control Water:	N/A
17. Aeration? Before/During Test:	None
18. Endpoints Measured:	LC <sub>50</sub> and TU <sub>a</sub>
19. If secondary control water used as diluent due to toxicity in primary control water, indicate number of consecutive tests conducted with alternative diluent:	N/A

## ACUTE TOXICITY TEST RESULTS

TABLE

Results of a <u>Pimephales</u> <u>promelas</u> <u>96</u> -Hour Static Acute Toxicity Test (genus) (species)								
Conducted <u>02/17/04</u> - <u>02/21/04</u> Using Effluent from Outfall <u>001</u> (mm/dd/yy) (mm/dd/yy) (number)								
Test Solutions	Cumulative Percent Mortality (Cumulative Percent Affected) <sup>a</sup>				LC <sub>50</sub> Values (EC <sub>50</sub> Values)			
	24-Hr	48-Hr	72-Hr	96-Hr	24-Hr	48-Hr	72-Hr	96-Hr
Primary Control/ Dilution Water	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	<u>&gt;100%</u> ( <u>N/A</u> )	<u>&gt;100%</u> ( <u>N/A</u> )	<u>&gt;100%</u> ( <u>N/A</u> )	<u>&gt;100%</u> ( <u>N/A</u> )
Secondary Control	<u>N/A</u> ( <u>   </u> )	<u>   </u> ( <u>   </u> )	<u>   </u> ( <u>   </u> )	<u>   </u> ( <u>   </u> )	LC <sub>50</sub> 95% Confidence Limits (EC <sub>50</sub> 95% Confidence Limits)			
<u>10 %</u> Effluent	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	24-Hr	48-Hr	72-Hr	96-Hr
<u>18 %</u> Effluent	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	<u>1</u> ( <u>5</u> )	<u>1</u> ( <u>5</u> )	LL <u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>32 %</u> Effluent	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	UL <u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>56 %</u> Effluent	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	<u>1</u> ( <u>5</u> )	<u>1</u> ( <u>5</u> )	LL ( <u>N/A</u> )	( <u>   </u> )	( <u>   </u> )	( <u>   </u> )
<u>100 %</u> Effluent	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	UL ( <u>N/A</u> )	( <u>   </u> )	( <u>   </u> )	( <u>   </u> )
Near-Field Sample	<u>N/A</u> ( <u>   </u> )	<u>   </u> ( <u>   </u> )	<u>   </u> ( <u>   </u> )	<u>   </u> ( <u>   </u> )	LL = Lower Limit UL = Upper Limit			
					Calculated TU <sub>a</sub> Value: <u>1.0</u>			
					Method(s) Used to Determine LC <sub>50</sub> , EC <sub>50</sub> , and Confidence Limit Values:  Visual Inspection			

<sup>a</sup>-cumulative percent affected is the total percentage of test organisms observed dead, immotile, exhibiting loss of equilibrium, or other defined endpoints (specify below):  
\_\_\_\_\_

## TOXICITY TEST CONDITIONS

TABLE

Summary of Toxicity Test Conditions	
1. Test Species and Age:	<i>Ceriodaphnia dubia</i> - <24-hours old
2. Test Type and Duration:	48-hour Static Acute
3. Test Dates:	17 - 19 February 2004
4. Test Temperature (°C):	25.0°C ± 1°C
5. Light Quality:	50-100 ft candles
6. Photoperiod:	16 hours light / 8 hours dark
7. Feeding Regime:	None
8. Size of Test Vessel:	30 mL
9. Volume and Depth of Test Solutions:	25 mL / 25 mm
10. No. of Test Organisms per Test Vessel:	Five
11. No. of Test Vessels per Test Solution:	Four
12. Total No. of Test Organisms per Test Solution:	20
13. Test Concentrations (as percent by volume effluent):	0, 10, 18, 32, 56, and 100%
14. Renewal of Test Solutions:	None
15. Dilution and Primary Control Water:	Moderately Hard Reconstituted Water
16. Secondary Control Water:	N/A
17. Aeration? Before/During Test:	None
18. Endpoints Measured:	LC <sub>50</sub> and TU <sub>a</sub>
19. If secondary control water used as diluent due to toxicity in primary control water, indicate number of consecutive tests conducted with alternative diluent:	N/A

## ACUTE TOXICITY TEST RESULTS

TABLE

Results of a <u>Ceriodaphnia</u> <u>dubia</u> <u>48</u> -Hour Static Acute Toxicity Test (genus) (species)								
Conducted <u>02/17/04</u> - <u>02/19/04</u> Using Effluent from Outfall <u>001</u> (mm/dd/yy) (mm/dd/yy) (number)								
Test Solutions	Cumulative Percent Mortality (Cumulative Percent Affected) <sup>a</sup>				LC <sub>50</sub> Values (EC <sub>50</sub> Values)			
	24-Hr	48-Hr	72-Hr	96-Hr	24-Hr	48-Hr	72-Hr	96-Hr
Primary Control/ Dilution Water	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	( )	( )	<u>&gt;100%</u> ( <u>N/A</u> )	<u>&gt;100%</u> ( <u>N/A</u> )	( )	( )
Secondary Control	<u>N/A</u> ( )	( )	( )	( )	LC <sub>50</sub> 95% Confidence Limits (EC <sub>50</sub> 95% Confidence Limits)			
<u>10</u> % Effluent	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	( )	( )	24-Hr	48-Hr	72-Hr	96-Hr
<u>18</u> % Effluent	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	( )	( )	LL <u>N/A</u>	<u>N/A</u>		
<u>32</u> % Effluent	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	( )	( )	UL <u>N/A</u>	<u>N/A</u>		
<u>56</u> % Effluent	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	( )	( )	LL ( <u>N/A</u> )	( <u>N/A</u> )	( )	( )
<u>100</u> % Effluent	<u>0</u> ( <u>0</u> )	<u>0</u> ( <u>0</u> )	( )	( )	UL ( <u>N/A</u> )	( <u>N/A</u> )	( )	( )
Near-Field Sample	<u>N/A</u> ( )	( )	( )	( )	LL = Lower Limit UL = Upper Limit			
					Calculated TU <sub>a</sub> Value: <u>1.0</u>			
					Method(s) Used to Determine LC <sub>50</sub> , EC <sub>50</sub> , and Confidence Limit Values:  Visual Inspection			

<sup>a</sup>-cumulative percent affected is the total percentage of test organisms observed dead, immotile, exhibiting loss of equilibrium, or other defined endpoints (specify below):  
\_\_\_\_\_

**ATTACHMENT 5**

**TWO CHRONIC TOXICITY EVALUATIONS – FEBRUARY 17-24, 2004  
NEASE CHEMICAL SITE, SALEM, OHIO**

RESULTS OF TWO CHRONIC TOXICITY EVALUATIONS OF  
RUTGERS ORGANICS CORPORATION,  
SALEM SITE LAGOON WATER TREATMENT PLANT  
FINAL EFFLUENT

AAT JOB # 51 - 01 - 68

17 – 24 February 2004

Report Prepared for:

Rutgers Organics Corporation  
201 Struble Road  
State College, Pennsylvania 16801

Report Prepared by:

AMERICAN AQUATIC TESTING, INC.  
890 NORTH GRAHAM STREET  
ALLENTOWN, PENNSYLVANIA 18109

## INTRODUCTION

A set of two 7-day daily renewal chronic toxicity tests were conducted with larval fathead minnows, *Pimephales promelas* (*P. promelas*) and the freshwater cladoceran, *Ceriodaphnia dubia* (*C. dubia*) to determine the relative toxicity of final effluent from the Rutgers Organics Corporation Lagoon Water Treatment Plant, Salem, Ohio. The larval fathead survival and growth chronic test and the *C. dubia* survival and reproduction test were conducted from 17 through 24 February 2004. The toxicity evaluations were conducted by American Aquatic Testing, Inc., Allentown, Pennsylvania.

All tests were performed according to procedures outlined in Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, 4<sup>th</sup> Edition (EPA/600/4-90/027F), Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Third Edition (EPA/600/4-19/002) and Reporting and Testing Guidance for Biomonitoring Required by the Ohio Environmental Protection Agency, October 1991.

## MATERIALS

### TEST ORGANISMS

#### Fathead Minnow, *Pimephales promelas*

Larval fathead minnows used in chronic testing were obtained from cultures maintained in house at ABS, Inc. Test age organisms are maintained in shallow depth basins containing 10L of moderately hard reconstituted water and are fed newly hatched *Artemia* (brine shrimp) nauplii twice a day up until test initiation. The test organisms were < 48 hours old at test initiation. No acclimation of these test organisms was required as they were raised in moderately hard reconstituted water, which was used for testing.

#### Freshwater Cladoceran, *Ceriodaphnia dubia*

Cladoceran neonates, *C. dubia* were obtained from AAT, Inc.'s in-house cultures. Cultures for generating test age (<24 hours old) neonates are maintained as single cultures in 30 mL soufflé cups containing 15 mL of moderately hard reconstituted water. These adults are transferred daily into fresh culture water and are fed a combination of a unicellular green alga (*Selenastrum capricornutum*) and a yeast/Cerophyll/trout chow (YCT) suspension. Broods released during an 8-hour period were pooled and used to initiate the chronic toxicity test. No acclimation of these test organisms was required as they were raised in moderately hard reconstituted water, which was used for testing. Neonates were released between 0900 and 1400 of 17 February 2004.

### DILUTION WATER

Moderately hard reconstituted water was prepared in accordance to procedures outlined in EPA/600/4-90/027F and was used as dilution/control water for the toxicity tests. Deionized water (Specialty Filtration Products) and reagent grade chemicals were used to achieve the following concentrations: 96 mg/L of NaHCO<sub>3</sub>, 60.0 mg/L of MgSO<sub>4</sub> and 4.0 mg/L of KCl and 60.0mg/L of CaSO<sub>4</sub> 2H<sub>2</sub>O.

### TEST MATERIAL

The material tested was final effluent collected by Howells and Baird personnel with a grab sampler placed at the outfall. Three grab samples were collected for each of the two chronic toxicity tests.

The sample collected February 16, 2004 was used to initiate the two chronic tests on February 17, 2004 and for renewal on Day 02. The sample collected February 18, 2004 was used for chronic renewals on Days 03 and 04. The third sample collected February 20, 2004 was used for renewals on Days 05, 06 & 07. Chain-of-Custody forms accompanied the samples. Tests were initiated prior to the expiration of the 36-hour holding time.



## METHODS

*P. promelas* larvae (<48 hours old) were exposed to the effluent samples for seven days under static, daily renewal conditions. Test organisms were exposed in groups of 10 in 1 L glass beakers containing 500 mL of test solution with four replicates per concentration (40 organisms per concentration). The test organisms were fed twice each day with *Artemia* nauplii from test initiation until day six. The test organisms were not fed for the last 16 hours of the test. Daily observations were made during test material exchange and the numbers of live animals were recorded on the appropriate benchsheets. Any dead animals were removed from the test chambers.

The fathead larval test was terminated at the end of seven days. All live test organisms from each replicate chamber were counted, rinsed with deionized water and transferred as a group to a pre-weighed aluminum pan. Pans with test organisms were dried at 105.0 °C for a minimum of six hours before being placed in a dessicator to cool. Each pan was weighed to the nearest 0.01 mg and the average test organism weight was determined by dividing by the original number of test organisms present (10).

*C. dubia* neonates (<24 hours old) were exposed to the effluent sample for seven days under static, renewal conditions. Test organisms were exposed individually in 30 mL soufflé cups containing 15 mL of test solution with 10 replicates per concentration (10 organisms per concentration). At test material renewal, the test organisms were fed a combination of YCT (yeast, Cerophyll and trout-chow) and the green alga, *S. capricornutum*, daily during the test exposure. Daily observations of the number of live animals were made as well as the number of neonates produced and recorded on the appropriate benchsheets.

The *C. dubia* test was terminated at seven days. The total number of neonates produced at each concentration was divided by the number of adult test organisms present to determine the average number of neonates produced.

Both sets of test chambers were placed in randomized positions in a temperature controlled environment maintained at  $25 \pm 1$  °C for the duration of the test exposure period. The highest concentration used for exposure was 100 %. A 0.30 dilution schedule was used to prepare sample concentrations of 30%, 10%, 3% and 1%, by volume. A control sample consisting of 100 % dilution water was also tested.

## RESULTS

### FATHEAD MINNOW SURVIVAL AND GROWTH

An NOEC (No-Observable-Effect-Concentration) value of 100% for survival was produced. An NOEC value of 100% for growth was produced. As a result, the TUC for this test is 1.0 (100%/NOEC), for the growth endpoint.

### CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION

An NOEC value of 100% for survival was produced. An NOEC value of 100% for reproduction was produced. As a result, the TUC for this test is 1.0 (100%/NOEC), for the reproduction endpoint.

Table I. Fathead Minnow Physical/Chemical Measurements Summary  
 CLIENT: Rutgers Organics Corp., Salem Lagoon Water Treatment Plant  
 TEST: 7-Day Chronic Toxicity Test  
 DATE: 17 – 24 February 2004

CONC.	Temp. °C		pH		D. O.		Cond. µmhos	
	Min	Max	Min	Max	Min	Max	Min	Max
Control	25.0	25.0	7.6	8.2	6.7	8.3	300	300
1%	25.0	25.0	7.6	8.2	6.7	8.3		
3%	25.0	25.0	7.7	8.2	6.7	8.3		
10%	25.0	25.0	7.7	8.2	6.7	8.3		
30%	25.0	25.0	7.8	8.3	6.7	8.5		
100%	25.0	25.0	8.2	8.5	6.5	9.0	700	880

SAMPLE	Alkalinity mg/L		Hardness mg/L		Chlorine mg/L	
	0 %	100 %	0 %	100 %	0 %	100 %
01	60	220	100	300	0	0
02	60	190	100	380	0	0
03	60	210	90	340	0	0

Table II. *Ceriodaphnia dubia* Physical/Chemical Measurements Summary  
 CLIENT: Rutgers Organics Corp., Salem Lagoon Water Treatment Plant  
 TEST: 7-Day Chronic Toxicity Test  
 DATE: 17 – 24 February 2004

CONC	Temp. °C		pH		D. O.		Cond. µmhos	
	Min	Max	Min	Max	Min	Max	Min	Max
Control	25.0	25.0	7.8	8.3	6.8	8.4	300	300
1%	25.0	25.0	7.8	8.4	6.8	8.5		
3%	25.0	25.0	7.8	8.4	6.7	8.5		
10%	25.0	25.0	7.8	8.4	6.6	8.5		
30%	25.0	25.0	7.9	8.5	6.6	8.6		
100%	25.0	25.0	8.0	8.7	6.5	9.0	700	880

SAMPLE	Alkalinity mg/L		Hardness mg/L		Chlorine mg/L	
	0 %	100 %	0 %	100 %	0 %	100 %
01	60	220	100	300	0	0.00
02	60	190	100	380	0	0.00
03	60	210	90	340	0	0.00

APPENDIX I

RAW DATA

RESULTS OF TWO CHRONIC TOXICITY EVALUATIONS OF  
RUTGERS ORGANICS CORPORATION,  
SALEM SITE LAGOON WATER TREATMENT PLANT  
FINAL EFFLUENT

17 – 24 February 2004

Client/Toxicant: 51-01-68  
 Project Number: 01-68  
 Species: P. promelas

Beginning Date & Time: 02-17-04 1745  
 Ending Date & Time: 02-24-04 1830  
 Hatch Date: 2-15-04

**Chronic Test**  
**American Aquatic Testing, Inc.**  
**Live Count**

Conc.	Rep	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Con	A	10	10	10	10	10	10	9 <sup>1</sup>	9
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	9 <sup>1</sup>	9	9	9	9	9
1	A	10	10	10	10	10	10	9 <sup>1</sup>	9
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
3	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
10	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
30	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
100	A	10	10	10	10	10	10	10	9 <sup>1</sup>
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	8 <sup>2</sup>
	D	10	10	10	10	10	10	10	10
	A								
	B								
	C								
	D								
Initials		g	MP	MP	JF	MP	JF	MP	JF
Date		2/17	2/18	2/19	2/20	2/21	2/22	2/23	2/24

Observations:

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Client/Toxicant: 51-01-68  
 Project Number: 01-68  
 Species: P. promelas

Beginning Date & Time: 02/17/04 1745  
 Ending Date & Time: 2-24-04 1830  
 Hatch Date: 2-15-04

**Chronic Test**  
**American Aquatic Testing, Inc.**  
**Weight Data**

Conc.	Rep	Pan #	A weight of boat (g)	B weight of boat & fish (g)	(B-A)*1000=C dry weight of fish (mg)	D # of surviving fish	C/D mean dry weight (mg)	C/E IC <sub>25</sub> & NOEC calc. weight (mg)
CON	A	1	0.0099	0.01228	2.38	9	0.264	0.238
	B	2	0.0088	0.01219	3.39	10	0.339	0.339
	C	3	0.0098	0.01356	3.76	10	0.376	0.376
	D	4	0.0095	0.01296	3.46	9	0.384	0.346
1	A	5	0.0094	0.01251	3.11	9		0.311
	B	6	0.0101	0.01269	2.59	10		0.259
	C	7	0.0101	0.01337	3.27	10		0.327
	D	8	0.0104	0.01377	3.37	10		0.337
3	A	9	0.0099	0.01444	4.54	10		0.454
	B	10	0.0109	0.01479	3.89	10		0.389
	C	11	0.0109	0.01459	3.69	10		0.369
	D	12	0.0100	0.01389	3.89	10		0.389
10	A	13	0.0097	0.01348	3.78	10		0.378
	B	14	0.0106	0.01452	3.92	10		0.392
	C	15	0.0112	0.01466	3.46	10		0.346
	D	16	0.0100	0.01396	3.96	10		0.396
30	A	17	0.0095	0.01334	3.84	10		0.384
	B	18	0.0108	0.01425	3.45	10		0.345
	C	19	0.0111	0.01480	3.70	10		0.370
	D	20	0.0097	0.01337	3.57	10		0.357
100	A	21	0.0109	0.01413	3.23	9		0.323
	B	22	0.0097	0.01337	3.67	10		0.367
	C	23	0.0089	0.01157	2.67	8		0.267
	D	24	0.0097	0.01348	3.78	10		0.378
✓	A							
	B							
	C							
	D							
Initials			90	90	700	JF	700	700
Date			2/24	2/25	2/26	2/24	2/26	2/26

E = Original number of organisms at test initiation, adjusted for losses.

Observations:

Client/Toxicant: 51-01-68  
 Job Number: 01-68  
 Species: P. promelas

Beginning Date & Time: 02-17-04 1745  
 Ending Date & Time: 2-24-04 1830

**Freshwater Chronic Test**  
**American Aquatic Testing, Inc.,**  
**Physical / Chemical Parameters**  
**Initial Readings**

		Day							
Parameter	Concentration	1	2	3	4	5	6	7	8
Temp (°C)	Control	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	1%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	3%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	10%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	30%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	100%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
Dissolved Oxygen (mg/L)	Control	7.9	8.0	8.3	8.3	8.2	8.0	7.7	<del>7.6</del>
	1%	7.8	8.0	8.3	8.3	8.2	8.0	7.7	<del>7.6</del>
	3%	7.8	8.0	8.3	8.3	8.2	8.0	7.7	
	10%	7.7	8.0	8.3	8.3	8.3	8.0	7.7	
	30%	7.3	8.2	8.3	8.3	8.5	7.8	7.6	
	100%	7.0	8.2	8.3	7.8	9.0	6.5	7.6	
pH	Control	7.8	8.1	8.1	7.8	8.0	8.0	8.2	
	1%	7.8	8.1	8.1	7.8	8.0	8.0	8.2	
	3%	7.9	8.1	8.1	7.8	8.1	8.0	8.2	
	10%	7.9	8.2	8.1	7.9	8.1	8.0	8.2	
	30%	8.1	8.3	8.3	8.0	8.2	8.1	8.2	
	100%	8.3	8.5	8.4	8.2	8.3	8.2	8.3	
Initials		MP	MP	MP	MP	MP	JF	MP	
Date		2/17	2/18	2/19	2/20	2/21	2/22	2/23	

Conductivity (µmhos/cm)		
Date	Control	100%
2/17	300	700
2/19	300	880
2/21	300	851
Initials		
MP MP		
Alkalinity (mg/L as CaCO <sub>3</sub> )		
Date	Control	100%
2/17	60	270
2/19	60	190
2/21	60	210
Initials		
MP MP		
Hardness (mg/L as CaCO <sub>3</sub> )		
Date	Control	100%
2/17	100	300
2/19	100	380
2/21	90	340
Initials		
MP MP		

**Final Readings**

		Day							
Parameter	Concentration	1	2	3	4	5	6	7	8
Temp (°C)	Control	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	1%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	3%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	10%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	30%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	100%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
Dissolved Oxygen (mg/L)	Control	7.3	7.6	7.4	7.3	7.3	6.7	7.6	
	1%	7.3	7.6	7.1	7.3	7.2	6.7	7.3	
	3%	7.3	7.6	7.1	7.2	6.9	6.7	6.9	
	10%	7.3	7.3	7.2	7.2	6.7	6.7	7.3	
	30%	7.3	7.3	7.1	7.2	7.0	6.7	7.2	
	100%	7.4	7.0	7.3	7.0	7.3	6.6	7.3	
pH	Control	7.9	8.2	7.7	7.9	7.9	8.0	7.6	
	1%	7.9	8.2	7.7	7.9	7.8	8.0	7.6	
	3%	7.8	8.2	7.7	8.0	7.8	8.0	7.7	
	10%	7.8	8.2	7.7	8.0	7.8	8.0	7.7	
	30%	7.9	8.2	7.8	8.1	8.0	8.1	7.9	
	100%	8.4	8.4	8.2	8.3	8.3	8.4	8.3	
Initials		MP	MP	JF	MP	JF	MP	MP	
Date		2/18	2/19	2/20	2/21	2/22	2/23	2/23	

Chlorine (mg/L)		
Date	Control	100%
2/17	0.00	0.00
2/19	0.00	0.00
2/21	0.00	0.00
NaSO <sub>4</sub> Added (mg/L)		
Date	Control	100%
Initials	MP	MP

Observations:

### Larval Fish Growth and Survival Test-7 Day Survival

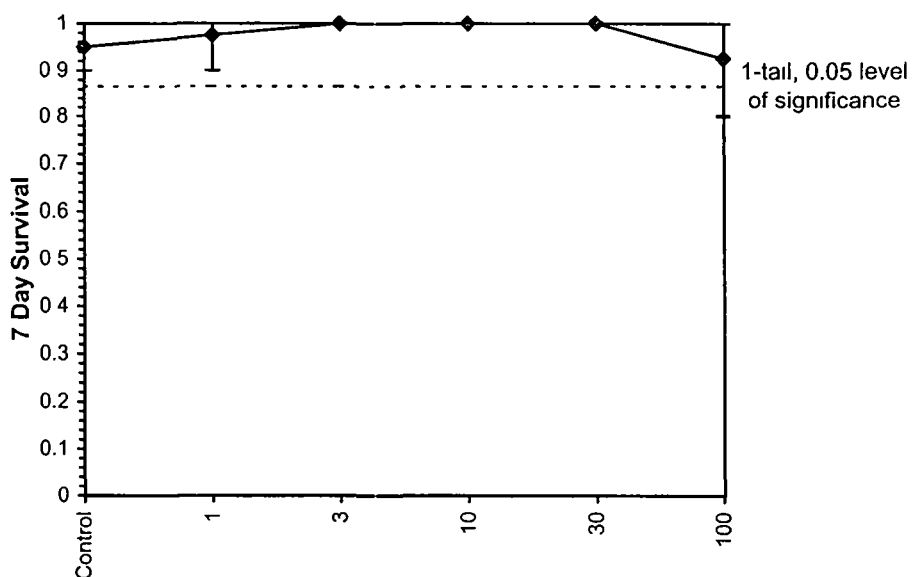
Start Date: 02/17/2004	Test ID: 510168CdC	Sample ID: Rutgers final effluent
End Date: 02/24/2004	Lab ID: AAT	Sample Type: 24 HR COMP
Sample Date:	Protocol: EPAF 94-EPA Freshwater	Test Species: PP-Pimephales promelas

Conc-%	1	2	3	4
Control	0.9000	1.0000	1.0000	0.9000
1	0.9000	1.0000	1.0000	1.0000
3	1.0000	1.0000	1.0000	1.0000
10	1.0000	1.0000	1.0000	1.0000
30	1.0000	1.0000	1.0000	1.0000
100	0.9000	1.0000	0.8000	1.0000

Conc-%	Mean	N-Mean	Transform: Arcsin Square Root				N	t-Stat	1-Tailed Critical	MSD
			Mean	Min	Max	CV%				
Control	0.9500	1.0000	1.3305	1.2490	1.4120	7.072	4			
1	0.9750	1.0263	1.3713	1.2490	1.4120	5.942	4	-0.733	2.410	0.1340
3	1.0000	1.0526	1.4120	1.4120	1.4120	0.000	4	-1.466	2.410	0.1340
10	1.0000	1.0526	1.4120	1.4120	1.4120	0.000	4	-1.466	2.410	0.1340
30	1.0000	1.0526	1.4120	1.4120	1.4120	0.000	4	-1.466	2.410	0.1340
100	0.9250	0.9737	1.2951	1.1071	1.4120	11.347	4	0.638	2.410	0.1340

Auxiliary Tests					Statistic		Critical		Skew	Kurt	
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)					0.88934		0.884		-0.7268	1.47094	
Equality of variance cannot be confirmed											
Hypothesis Test (1-tail, 0.05)		NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test		100	>100		1	0.07702	0.08164	0.00996	0.00618	0.20784	5, 18
Treatments vs Control											

Dose-Response Plot



### Larval Fish Growth and Survival Test-7 Day Biomass

Start Date: 02/17/2004	Test ID: 510168CdC	Sample ID: Rutgers final effluent
End Date: 02/24/2004	Lab ID: AAT	Sample Type: 24 HR COMP
Sample Date:	Protocol: EPAF 94-EPA Freshwater	Test Species: PP-Pimephales promelas

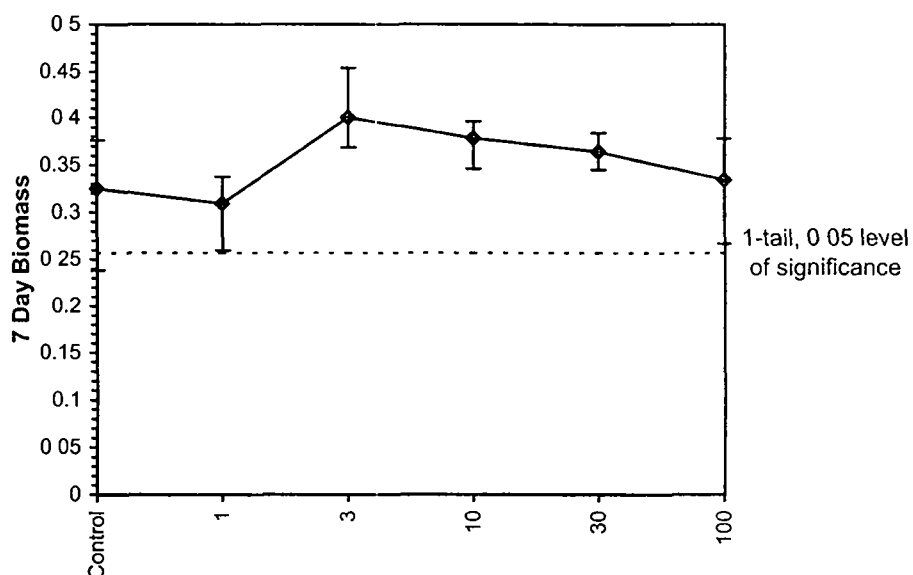
Comments:

Conc-%	1	2	3	4
Control	0.2380	0.3390	0.3760	0.3460
1	0.3110	0.2590	0.3270	0.3370
3	0.4540	0.3890	0.3690	0.3890
10	0.3780	0.3920	0.3460	0.3960
30	0.3840	0.3450	0.3700	0.3570
100	0.3230	0.3670	0.2670	0.3780

Conc-%	Mean	N-Mean	Transform: Untransformed				N	t-Stat	1-Tailed Critical	MSD
			Mean	Min	Max	CV%				
Control	0.3248	1.0000	0.3248	0.2380	0.3760	18.482	4			
1	0.3085	0.9500	0.3085	0.2590	0.3370	11.246	4	0.577	2.410	0.0679
3	0.4003	1.2325	0.4003	0.3690	0.4540	9.257	4	-2.680	2.410	0.0679
10	0.3780	1.1640	0.3780	0.3460	0.3960	6.002	4	-1.891	2.410	0.0679
30	0.3640	1.1209	0.3640	0.3450	0.3840	4.613	4	-1.393	2.410	0.0679
100	0.3338	1.0277	0.3338	0.2670	0.3780	15.115	4	-0.320	2.410	0.0679

Auxiliary Tests					Statistic	Critical	Skew	Kurt			
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)					0.95542	0.884	-0.7306	0.45728			
Bartlett's Test indicates equal variances (p = 0.38)					5.26418	15.0863					
Hypothesis Test (1-tail, 0.05)		NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test		100	>100		1	0.06788	0.20903	0.00489	0.00159	0.03496	5, 18
Treatments vs Control											

Dose-Response Plot





Project Number: 51-01-68Beginning Date & Time: 2-17-04 1500Ending Date & Time: 2-24-04 1220*Ceriodaphnia dubia*, Survival and Reproduction Test

American Aquatic Testing, Inc.,

## Survival / Reproduction Data

		Conc.		Replicate										Initials									
Day	Control		1	2	3	4	5	6	7	8	9	10											
1	N	B	0	0	0	0	0	0	0	0	0	0	MP										
2	N	B	0	0	0	0	0	0	0	0	0	0	MP										
3	N	B	0	0	0	0	0	0	0	0	0	0	MP										
4	N	B	4	1	4	1	6	1	6	1	4	1	5	1	6	1	4	1	TRP				
5	N	B	0	0	0	14	2	12	2	10	2	10	2	12	2	12	2	12	2	JK			
6	N	B	12	2	10	2	0	18	3	18	3	14	3	16	3	13	3	0	0	MP			
7	N	B	18	3	18	3	16	2	0	0	0	0	0	0	0	20	3	20	3	MP			
8	N	B																					
Tot N		Tot B	34	3	32	3	20	2	38	3	36	3	30	3	30	3	28	3	38	3	36	3	Tot A
																						10	

Average Neonates per Female = 29.5 <sup>①</sup>% Females with 3rd Brood = 90

Conc.			Replicate														Initials									
Day	10%		1	2	3	4	5	6	7	8	9	10														
1	N	B	0	0	0	0	0	0	0	0	0	0	0	0	0	MP										
2	N	B	0	0	0	0	0	0	0	0	0	0	0	0	0	MP										
3	N	B	0	0	0	0	0	0	0	0	0	0	0	0	0	MP										
4	N	B	4	1	4	1	3	1	3	1	6	1	3	1	6	1	4	1	TRP							
5	N	B	0	0	12	2	4	2	10	2	11	2	12	2	10	2	12	2	10	2	JK					
6	N	B	10	2	12	2	0	0	0	0	16	3	0	0	0	0	0	0	0	0	MP					
7	N	B	20	3	18	3	16	3	0	18	3	19	3	0	20	3	19	3	17	3	MP					
8	N	B																								
Tot N			Tot B			34	3	34	3	32	3	7	2	31	3	33	3	34	3	33	3	37	3	31	3	Tot A
																									10	

Average Neonates per Female = 30.6% Females with 3rd Brood = 90

Conc.			Replicate												Initials											
Day	30%		1	2	3	4	5	6	7	8	9	10														
1	N	B	0	0	0	0	0	0	0	0	0	0	0	MP												
2	N	B	0	0	0	0	0	0	0	0	0	0	0	MP												
3	N	B	0	0	0	0	0	0	0	0	0	0	0	MP												
4	N	B	4	1	4	1	4	1	3	1	1	1	4	1	4	1	4	1	5	1	TR					
5	N	B	10	2	10	2	12	2	9	2	0	12	2	9	2	12	2	11	2	10	2	JK				
6	N	B	0	0	0	0	8	2	0	0	0	0	12	3	20	3	0	0	0	0	MP					
7	N	B	18	3	20	3	17	3	18	3	14	3	16	3	21	3	16	3	0	0	MP					
8	N	B																								
Tot N			Tot B			38	3	34	3	33	3	30	3	23	3	32	3	34	3	32	3	27	3	35	3	Tot A
																									10	

Average Neonates per Female = 31.8% Females with 3rd Brood = 100

(N=Neonates, B=Broods, A=Alive)

Observations: ① 32.2 g

Project Number: 51-01-68Beginning Date & Time: 2-17-04 1500Ending Date & Time: 2-24-04 1220***Ceriodaphnia dubia*, Survival and Reproduction Test**

American Aquatic Testing, Inc.,

## Survival / Reproduction Data

Survival / Reproduction Data																									
Conc.			Replicate																Initials						
Day	10%		1	2	3	4	5	6	7	8	9	10													
1	N	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MP								
2	N	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MP								
3	N	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MP								
4	N	B	4	1	4	1	4	1	2	1	7	1	4	1	2	1	6	1	4	1	6	1	TPS		
5	N	B	14	2	12	2	10	2	9	2	12	2	12	2	10	2	10	2	10	2	10	2	JL		
6	N	B	0	0	14	3	12	3	0	0	12	3	13	3	18	3	18	3	18	3	18	3	MP		
7	N	B	16	3	18	3	0	0	18	3	18	3	0	0	0	0	0	0	0	0	0	0	MP		
8	N	B																							
Tot N			Tot B		34	3	34	3	28	3	23	3	37	3	34	3	24	3	29	3	32	3	34	3	Tot A
																								10	

Average Neonates per Female = 30.9% Females with 3rd Brood = 100

Conc.			Replicate												Initials								
Day	30%		1	2	3	4	5	6	7	8	9	10											
1	N	B	0	0	0	0	0	0	0	0	0	0	0	MP									
2	N	B	0	0	0	0	0	0	0	0	0	0	0	MP									
3	N	B	0	0	0	0	0	0	0	0	0	0	0	MP									
4	N	B	4	1	5	1	6	1	6	1	6	1	6	1	5	1	4	1	MP				
5	N	B	12	2	12	2	13	2	12	2	10	2	4	2	12	2	14	2	14	2	12	2	JR
6	N	B	0	0	15	3	16	3	15	3	13	3	20	3	16	3	23	3	16	3	16	3	MP
7	N	B	17	3	17	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MP
8	N	B																					
Tot N		Tot B	33	3	34	3	34	3	31	3	23	3	38	3	36	3	42	3	32	3	32	3	Tot A
																						10	

Average Neonates per Female = 33.7% Females with 3rd Brood = 100

Conc.			Replicate														Initials								
Day	100%		1	2	3	4	5	6	7	8	9	10													
1	N	B	0	0	0	0	0	0	0	0	0	0	0	0	0	MP									
2	N	B	0	0	0	0	0	0	0	0	0	0	0	0	0	MP									
3	N	B	0	0	0	0	0	0	0	0	0	0	0	0	0	MP									
4	N	B	4	1	4	1	4	1	3	1	4	1	4	1	2	1	4	1	4	1	MP				
5	N	B	10	2	10	2	14	2	10	2	10	2	8	2	10	2	8	2	10	2	14	2	JL		
6	N	B	11	2	0	0	0	14	3	10	3	15	3	0	0	0	0	0	0	0	0	MP			
7	N	B	14	3	16	3	16	3	13	3	0	0	0	0	12	3	15	3	17	3	17	3	MP		
8	N	B																							
Tot N			Tot B		29	3	30	3	34	3	25	3	27	3	22	3	29	3	22	3	29	3	35	3	Tot A
10																									

Average Neonates per Female = 28.2% Females with 3rd Brood = 100

(N=Neonates, B=Broods, A=Alive)

Observations: \_\_\_\_\_

Client/Toxicant: 51  
 Job Number: 01-68  
 Species: C. dubia

Beginning Date & Time: 2-17-04 1500  
 Ending Date & Time: 2-24-04 1200

**Freshwater Chronic Test**  
**American Aquatic Testing, Inc.,**  
**Physical / Chemical Parameters**  
**Initial Readings**

Parameter	Concentration	Day							
		1	2	3	4	5	6	7	8
Temperature (°C)	Control	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	1%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	3%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	10%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	30%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	100%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
Dissolved Oxygen (mg/L)	Control	7.9	8.0	8.3	8.3	8.2	8.0	7.7	
	1%	7.8	8.0	8.3	8.3	8.2	8.0	7.7	
	3%	7.8	8.0	8.3	8.3	8.2	8.0	7.7	
	10%	7.7	8.0	8.3	8.3	8.3	8.0	7.7	
	30%	7.3	8.2	8.3	8.3	8.5	7.8	7.6	
	100%	7.0	8.2	8.3	7.8	9.0	6.5	7.6	
pH	Control	7.8	8.1	8.1	7.8	8.0	8.0	8.2	
	1%	7.8	8.1	8.1	7.8	8.0	8.0	8.2	
	3%	7.9	8.1	8.1	7.8	8.1	8.0	8.2	
	10%	7.9	8.2	8.1	7.9	8.1	8.0	8.2	
	30%	8.1	8.3	8.3	8.0	8.2	8.1	8.2	
	100%	8.3	8.5	8.4	8.2	8.3	8.2	8.3	
Initials		MP	MP	MP	MP	MP	JF	MP	
Date		2/17	2/18	2/19	2/20	2/21	2/22	2/23	

Conductivity (µmhos/cm)		
Date	Control	100%
2/17	300	700
2/19	300	880
2/21	300	851
Initials		
Alkalinity (mg/L as CaCO <sub>3</sub> )		
Date	Control	100%
2/17	60	230
2/19	60	190
2/21	60	210
Initials		
Hardness (mg/L as CaCO <sub>3</sub> )		
Date	Control	100%
2/17	100	390
2/19	100	380
2/21	90	340
Initials		

**Final Readings**

Parameter	Concentration	Day							
		1	2	3	4	5	6	7	8
Temperature (°C)	Control	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	1%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	3%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	10%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	30%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	100%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
Dissolved Oxygen (mg/L)	Control	6.8	7.6	7.7	7.9	8.4	7.6	7.8	
	1%	6.8	7.6	7.7	7.9	8.5	7.6	7.8	
	3%	6.7	7.5	7.7	7.9	8.5	7.6	7.7	
	10%	6.6	7.5	7.8	8.0	8.5	7.6	7.6	
	30%	6.6	7.5	7.8	8.0	8.6	7.7	7.7	
	100%	6.7	7.5	7.8	8.1	8.7	7.7	7.7	
pH	Control	7.9	8.1	7.8	8.3	7.9	8.3	8.0	
	1%	7.9	8.1	7.8	8.4	7.9	8.3	8.0	
	3%	7.9	8.1	7.8	8.4	8.0	8.3	8.0	
	10%	7.9	8.2	7.8	8.4	8.1	8.4	8.0	
	30%	8.0	8.3	7.9	8.5	8.1	8.5	8.1	
	100%	8.0	8.5	8.3	8.6	8.2	8.7	8.4	
Initials		MP	MP	JF	MP	JF	MP	MP	
Date		2/18	2/19	2/20	2/21	2/22	2/23	2/24	

Chlorine (mg/L)		
Date	Control	100%
2/17	0.00	0.00
2/19	0.00	0.00
2/21	0.00	0.00
NaSO <sub>4</sub> Added (mg/L)		
Date	Control	100%
Initials	MP	MP

Observations:

# **Ceriodaphnia Survival and Reproduction Test-7 Day Survival**

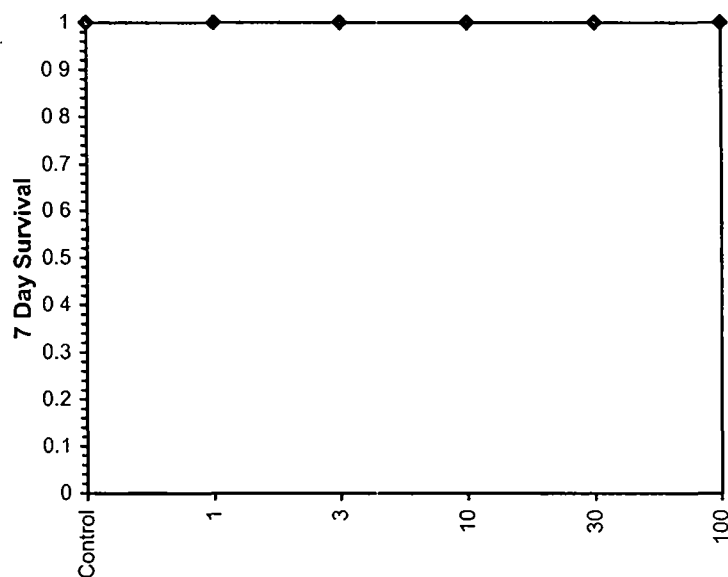
Start Date: 02/17/2004	Test ID: 510168PpC	Sample ID: Rutgers final effluent
End Date: 02/24/2004	Lab ID: AAT	Sample Type: 24 HR COMP
Sample Date:	Protocol: EPAF 94-EPA Freshwater	Test Species: CD-Ceriodaphnia dubia
Comments:		

Conc-%	1	2	3	4	5	6	7	8	9	10
Control	1 0000	1.0000	1 0000	1.0000	1 0000	1 0000	1 0000	1.0000	1 0000	1.0000
1	1.0000	1 0000	1 0000	1.0000	1 0000	1 0000	1.0000	1 0000	1.0000	1 0000
3	1 0000	1 0000	1.0000	1 0000	1 0000	1.0000	1 0000	1.0000	1 0000	1 0000
10	1 0000	1.0000	1 0000	1.0000	1.0000	1 0000	1.0000	1.0000	1.0000	1.0000
30	1.0000	1.0000	1 0000	1.0000	1.0000	1 0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1 0000	1.0000	1 0000	1.0000	1.0000	1 0000	1.0000	1 0000	1.0000

Conc-%	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical
Control	1 0000	1.0000	0	10	10	10		
1	1 0000	1 0000	0	10	10	10	1.0000	0.0500
3	1.0000	1 0000	0	10	10	10	1.0000	0.0500
10	1 0000	1 0000	0	10	10	10	1 0000	0.0500
30	1.0000	1.0000	0	10	10	10	1.0000	0.0500
100	1 0000	1 0000	0	10	10	10	1.0000	0.0500

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	100	>100		1
Treatments vs Control				

**Dose-Response Plot**



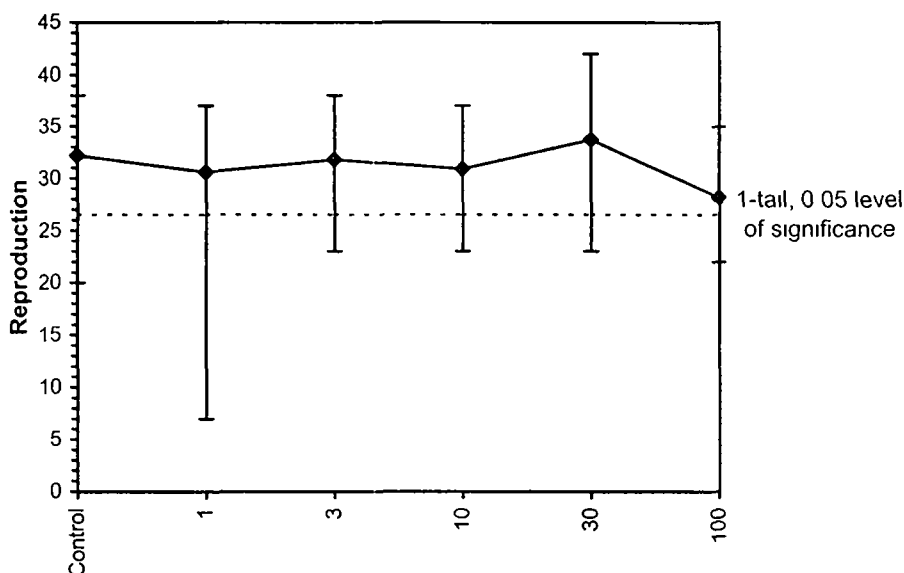
Ceriodaphnia Survival and Reproduction Test-Reproduction					
Start Date	02/17/2004	Test ID	510168PpC	Sample ID	Rutgers final effluent
End Date	02/24/2004	Lab ID	AAT	Sample Type	24 HR COMP
Sample Date		Protocol	EPAF 94-EPA Freshwater	Test Species	CD-Ceriodaphnia dubia
Comments					

Conc-%	1	2	3	4	5	6	7	8	9	10
Control	34.000	32.000	20.000	38.000	36.000	30.000	30.000	28.000	38.000	36.000
1	34.000	34.000	32.000	7.000	31.000	33.000	34.000	33.000	37.000	31.000
3	38.000	34.000	33.000	30.000	23.000	32.000	34.000	32.000	27.000	35.000
10	34.000	34.000	28.000	23.000	37.000	34.000	24.000	29.000	32.000	34.000
30	33.000	34.000	34.000	34.000	31.000	23.000	38.000	36.000	42.000	32.000
100	29.000	30.000	34.000	25.000	27.000	22.000	29.000	22.000	29.000	35.000

Conc-%	Mean	N-Mean	Transform: Untransformed					t-Stat	1-Tailed	
			Mean	Min	Max	CV%	N		Critical	MSD
Control	32.200	1.0000	32.200	20.000	38.000	17.186	10			
1	30.600	0.9503	30.600	7.000	37.000	27.695	10	0.642	2.287	5.697
3	31.800	0.9876	31.800	23.000	38.000	13.407	10	0.161	2.287	5.697
10	30.900	0.9596	30.900	23.000	37.000	15.214	10	0.522	2.287	5.697
30	33.700	1.0466	33.700	23.000	42.000	14.608	10	-0.602	2.287	5.697
100	28.200	0.8758	28.200	22.000	35.000	15.574	10	1.605	2.287	5.697

Auxiliary Tests					Statistic		Critical		Skew	Kurt	
Kolmogorov D Test indicates non-normal distribution (p <= 0.01)					1.29427		1 035		-1.8212	5.63706	
Bartlett's Test indicates equal variances (p = 0 25)					6.66753		15 0863				
Hypothesis Test (1-tail, 0.05)		NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test		100	>100		1	5 69749	0 17694	34.1067	31 0407	0.37189	5, 54
Treatments vs Control											

Dose-Response Plot



*[Signature]*

APPENDIX II

OHIO EPA NPDES BIOMONITORING REPORT FORM

Date Created: 5/24/91  
Last Revised: 9/23/91

Page 1 of 5

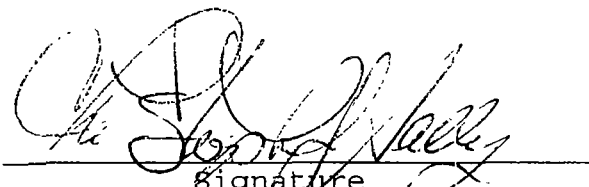
OHIO EPA NPDES BIOMONITORING REPORT FORM

GENERAL INFORMATION

1. Facility Name: Ruetgers-Nease Corporation  
Reporting Date: March 05, 2004
  2. Address: 1224 Benton Road  
Salem, Ohio 44460
  3. Ohio EPA Permit Number: Substantive Discharge Criteria
  4. Application (NPDES) No.
  5. Facility Contact: Ralph Pearce 6. Phone No.: (800) 458-3434
  7. Consultant/Testing Lab Name: American Aquatic Testing, Inc.
  8. Consultant/Lab Contact: Chris Nally 9. Phone No.: (610) 434-9015
  10. Receiving Water(s) of Discharge: Unnamed Tributary of the Middle Fork of Middle Creek.
  11. Outfall(s) Tested: 

02/16/04	02/18/04	02/20/04
<u>001</u>	<u>001</u>	<u>001</u>
- Average Daily Flows:  
on Day Sampled (gal/day)
12. Is your current Standard Operating Procedure (SOP) Manual on file with Ohio EPA? (Yes/No) No If yes, date submitted: \_\_\_\_\_  
If no, an SOP that follows Ohio EPA and/or U.S. EPA protocols must be submitted as soon as possible in order to eliminate the need to include this information with every report.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

  
Signature  
Christopher J. Nally, President

  
Date

## CHRONIC TOXICITY TEST SAMPLING DATA

TABLE

Sampling Summary for Chronic Toxicity Tests				
Sampling Location & Description	Sample	Sample Collection Beginning MM/DD/Time MM/DD/Time	Ending	Weather/Receiving Stream Conditions
Final Effluent: Processed Water				
Outfall No.: <u>001</u>	1st	02/16/ 1300	N/A	N/A
Type (Grab/Composite): <u>Grab</u>	2nd	02/18/ 1200	N/A	N/A
Volume Collected: <u>2.5-gallon</u>	3rd	02/20/ 1030	N/A	N/A
Upstream Station:				
Waterbody:	1st	N/A	N/A	N/A
Station No.:	2nd			
Type (Grab/Composite):	3rd			
Volume Collected:				
Downstream Station (Near-field):				
Waterbody:	1st	N/A	N/A	N/A
Station No.:	2nd			
Type (Grab/Composite):	3rd			
Volume Collected:				
Downstream Station (Far-field):				
Waterbody:	1st	N/A	N/A	N/A
Station No.:	2nd			
Type (Grab/Composite):	3rd			
Volume Collected:				
Additional Stations (If needed):				
Waterbody:	1st	N/A	N/A	N/A
Station No.:	2nd			
Type (Grab/Composite):	3rd			
Volume Collected:				



## TOXICITY TEST CONDITIONS

TABLE

## Summary of Toxicity Test Conditions

1. Test Species and Age:	<i>Ceriodaphnia dubia</i> - 2 to 7 hrs old
2. Test Type and Duration:	3 brood Chronic Toxicity Test
3. Test Dates:	February 17 - 24 2003
4. Test Temperature (°C):	25.0°C
5. Light Quality:	340-ft candles
6. Photoperiod:	16 hours light / 8 hours dark
7. Feeding Regime:	0.1 mL <i>Selenastrum</i> and 0.1 mL YCT daily
8. Size of Test Vessel:	30 mL
9. Volume and Depth of Test Solutions:	15 mL / 25 mm
10. No. of Test Organisms per Test Vessel:	One
11. No. of Test Vessels per Test Solution:	Ten
12. Total No. of Test Organisms per Test Solution:	Ten
13. Test Concentrations (as percent by volume effluent):	0%, 1%, 3%, 10%, 30%, and 100%
14. Renewal of Test Solutions:	Daily
15. Dilution and Primary Control Water:	Moderately Hard Reconstituted Water
16. Secondary Control Water:	N/A
17. Aeration? Before/During Test:	None
18. Endpoints Measured:	NOEC, LOEC, TU <sub>c</sub> , ChV, LC <sub>50</sub> , IC <sub>25</sub>
19. If secondary control water used as diluent due to toxicity in primary control water, indicate number of consecutive tests conducted with alternative diluent:	N/A

## CHRONIC TOXICITY TEST RESULTS FOR CERIODAPHNIA DUBIA

TABLE

Results of a 7-day <u>Ceriodaphnia dubia</u> Survival and reproduction Test Conducted										
(genus) (species)										
02/17/04 - 02/24/04 Using Effluent from Outfall 001										
(mm/dd/yy) (mm/dd/yy) (number)										
Test Solutions		Cumulative Percent Mortality <sup>a</sup> (Cumulative Percent Adversely Affected) <sup>a</sup>						Number of Young Produced <sup>a</sup>		
		1	2	3	4	5	6	7	Total	Mean
Primary control/ Dilution water		0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	322	32.2
Secondary Control		N/A ( )	( )	( )	( )	( )	( )	( )	N/A	N/A
1 % Effluent		0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	306	30.6
3 % Effluent		0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	318	31.8
10 % Effluent		0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	309	30.9
30 % Effluent		0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	337	33.7
100 % Effluent		0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	282	28.2
Near-Field Sample		N/A ( )	( )	( )	( )	( )	( )	( )	N/A	N/A
Far-Field Sample		N/A ( )	( )	( )	( )	( )	( )	( )	N/A	N/A
NOEC Values		100 %	100 %	100 %	100 %	100 %	100 %	100 %	Calculated TUC Value for Survival. 1.00	
95% Confidence Limits	LL	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	UL	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
EC <sub>50</sub> Values		N/A	N/A	N/A	N/A	N/A	N/A	N/A	Calculated TUC Value for Reproduction: 3.33	
95% Confidence Limits	LL	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	UL	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
7-day NOEC for Mortality: 100%			7-day NOEC for Reproduction: 100%					Method(s) Used to Determine Values: Shapiro-Wilk's  Bartlett's Test		
7-day LOEC for Mortality: Not Detected			7-day LOEC for Reproduction: Not Detected							
Chronic Value for Mortality: 1.0			Chronic Value for Reproduction: 1.0							
a – indicate significant differences from the primary control with an * (p=0.05).										

## ADDITIONAL TOXICITY TEST INFORMATION

- 1 Submit all raw data and statistical calculations/printouts obtained during the test(s). Data must be presented in tabular form and must include all physical and/or chemical measurements recorded during the tests and sampling (e.g., temperature, conductivity, dissolved oxygen, pH, hardness, alkalinity, etc.).
2. Method(s) used to verify near-field and/or far-field sampling locations must be included if stream testing is required. Maps, sketches, and/or drawings may be used to show locations.

## CONCLUSIONS/COMMENTS

Indicate below any other relevant information that may aid in the evaluation of this report. Include any deviations from your SOP that were necessary for these tests and any recent Standard Reference Toxicant (SRT) results obtained. Do these results agree with previous SRT results? Attach additional pages as needed.

Standard reference Toxicant test:

<u>Toxicant:</u>	<u>Potassium chloride</u>
<u>Date:</u>	<u>01/2/ -02/03/04</u>
<u>IC<sub>25</sub>:</u>	<u>325.3.ppm</u>
<u>Average:</u>	<u>291.4 ppm</u>
<u>Upper Limit:</u>	<u>396.2 ppm</u>
<u>Lower Limit:</u>	<u>186.7 ppm</u>
<u>Test value +/- 2 std. Dev.:</u>	<u>Yes</u>

Date Created: 5/24/91  
Last Revised: 9/23/91

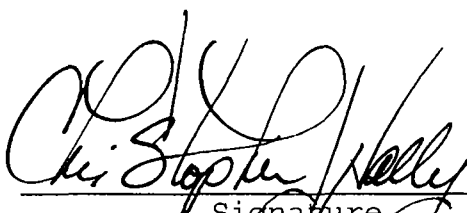
Page 1

OHIO EPA NPDES BIOMONITORING REPORT FORM

GENERAL INFORMATION

1. Facility Name: Ruetgers-Nease Corporation  
Reporting Date: March 05, 2004
2. Address: 1224 Benton Road  
Salem, Ohio 44460
3. Ohio EPA Permit Number: Substantive Discharge Criteria  
4. Application (NPDES) No. \_\_\_\_\_
5. Facility Contact: Ralph Pearce 6. Phone No.: (800) 458-3434
7. Consultant/Testing Lab Name: American Aquatic Testing, Inc.
8. Consultant/Lab Contact: Chris Nally 9. Phone No.: (610) 434-9015
10. Receiving Water(s) of Discharge: Unnamed Tributary of the Middle Fork of Middle Creek.
- |                        |                 |                 |                 |
|------------------------|-----------------|-----------------|-----------------|
|                        | <u>02/16/04</u> | <u>02/18/04</u> | <u>02/20/04</u> |
| 11. Outfall(s) Tested: | <u>001</u>      | <u>001</u>      | <u>001</u>      |
- Average Daily Flows:  
on Day Sampled (gal/day)
12. Is your current Standard Operating Procedure (SOP) Manual on file with Ohio EPA? (Yes/No) No If yes, date submitted: \_\_\_\_\_  
If no, an SOP that follows Ohio EPA and/or U.S. EPA protocols must be submitted as soon as possible in order to eliminate the need to include this information with every report.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

  
\_\_\_\_\_  
Signature  
Christopher J. Nally President

03/15/04  
\_\_\_\_\_  
Date

TABLE

Sampling Summary for Chronic Toxicity Tests				
Sampling Location & Description	Sample	Sample Collection Beginning MM/DD/Time MM/DD/Time	Ending	Weather/Receiving Stream Conditions
Final Effluent: Processed Water				
Outfall No.: <u>001</u>	1st	02/16/ 1300	N/A	N/A
Type (Grab/Composite): <u>Grab</u>	2nd	02/18/ 1200	N/A	N/A
Volume Collected: <u>2.5-gallon</u>	3rd	02/20/ 1030	N/A	N/A
Upstream Station:				
Waterbody:	1st	N/A	N/A	N/A
Station No.:	2nd			
Type (Grab/Composite):	3rd			
Volume Collected:				
Downstream Station (Near-field):				
Waterbody:	1st	N/A	N/A	N/A
Station No.:	2nd			
Type (Grab/Composite):	3rd			
Volume Collected:				
Downstream Station (Far-field):				
Waterbody:	1st	N/A	N/A	N/A
Station No.:	2nd			
Type (Grab/Composite):	3rd			
Volume Collected:				
Additional Stations (If needed):				
Waterbody:	1st	N/A	N/A	N/A
Station No.:	2nd			
Type (Grab/Composite):	3rd			
Volume Collected:				

## TOXICITY TEST CONDITIONS

TABLE

## Summary of Toxicity Test Conditions

1. Test Species and Age:	<i>Pimephales promelas</i> - < 48-hr old
2. Test Type and Duration:	7-day Chronic Toxicity Test
3. Test Dates:	17 – 24 February 2004
4. Test Temperature (°C):	25.0°C
5. Light Quality:	340-ft candles
6. Photoperiod:	16 hours light / 8 hours dark
7. Feeding Regime:	0.1 mL <i>Artemia</i> nauplii two times daily
8. Size of Test Vessel:	1000 mL
9. Volume and Depth of Test Solutions	500 mL / 92 mm
10. No. of Test Organisms per Test Vessel	Ten
11. No. of Test Vessels per Test Solution:	Four
12. Total No. of Test Organisms per Test Solution:	40
13. Test Concentrations (as percent by volume effluent):	0%, 1%, 3%, 10%, 30%, and 100%
14. Renewal of Test Solutions:	Daily
15. Dilution and Primary Control Water:	Moderately Hard Reconstituted Water
16. Secondary Control Water:	N/A
17. Aeration? Before/During Test:	None
18. Endpoints Measured:	NOEC, LOEC, TU <sub>c</sub> , ChV, LC <sub>50</sub> , IC <sub>25</sub>
19. If secondary control water used as diluent due to toxicity in primary control water, indicate number of consecutive tests conducted with alternative diluent:	N/A

## CHRONIC TOXICITY TEST RESULTS FOR *Pimephales Promelas*

TABLE

Results of a 7-day <u>Pimephales</u> <u>promelas</u> Survival and Growth Test Conducted										
(genus) (species)										
02/17/04 - 02/24/04 Using Effluent from Outfall <u>001</u>										
(mm/dd/yy) (mm/dd/yy) (number)										
Test Solutions		Cumulative Percent Mortality <sup>a</sup> (Cumulative Percent Adversely Affected) <sup>a</sup>						Dry Weight <sup>a</sup> Total Mean		
		Test Day								
		1	2	3	4	5	6	7		
Primary control/ Dilution water		0 ( 0 )	1 ( 2.5 )	1 ( 2.5 )	1 ( 2.5 )	1 ( 2.5 )	2 ( 5 )	2 ( 5 )	1.299	0.3248
Secondary Control		N/A ( )	( )	( )	( )	( )	( )	( )	N/A	N/A
1 % Effluent		0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2.5 )	1 ( 2.5 )	1.234	0.3085
3 % Effluent		0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1.601	0.4003
10 % Effluent		0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1.512	0.3780
30 % Effluent		0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1.456	0.3640
100 % Effluent		0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	3 ( 7.5 )	1.335	0.3338
Near-Field Sample		N/A ( )	( )	( )	( )	( )	( )	( )	N/A	N/A
Far-Field Sample		N/A ( )	( )	( )	( )	( )	( )	( )	N/A	N/A
NOEC Values		100 %	100 %	100 %	100 %	100 %	100 %	100 %	Calculated TUC Value for Survival: 1.00	
95% Confidence Limits	LL	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	UL	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
EC <sub>50</sub> Values		N/A	N/A	N/A	N/A	N/A	N/A	N/A	Calculated TUC Value for Growth: 1.00	
95% Confidence Limits	LL	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	UL	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
7-day NOEC for Mortality: 100%			7-day NOEC for Growth: 100%					Method(s) Used to Determine Values: Dunnett's Test  Bartlett's Test		
7-day LOEC for Mortality: Not Detected			7-day LOEC for Growth: Not Detected							
Chronic Value for Mortality: 1.0			Chronic Value for Growth: 1.0							
a – indicate significant differences from the primary control with an * (p=0.05).										

## ADDITIONAL TOXICITY TEST INFORMATION

1. Submit all raw data and statistical calculations/printouts obtained during the test(s). Data must be presented in tabular form and must include all physical and/or chemical measurements recorded during the tests and sampling (e.g., temperature, conductivity, dissolved oxygen, pH, hardness, alkalinity, etc.).
2. Method(s) used to verify near-field and/or far-field sampling locations must be included if stream testing is required. Maps, sketches, and/or drawings may be used to show locations.

## CONCLUSIONS/COMMENTS

Indicate below any other relevant information that may aid in the evaluation of this report. Include any deviations from your SOP that were necessary for these tests and any recent Standard Reference Toxicant (SRT) results obtained. Do these results agree with previous SRT results? Attach additional pages as needed.

\_\_\_\_\_ Standard reference Toxicant test:

\_\_\_\_\_ Toxicant: \_\_\_\_\_ Potassium chloride

\_\_\_\_\_ Date: \_\_\_\_\_ 02/17 - 24/04

\_\_\_\_\_ IC<sub>25</sub>: \_\_\_\_\_ 615.4 ppm

\_\_\_\_\_ Average: \_\_\_\_\_ 556.3 ppm

\_\_\_\_\_ Upper Limit: \_\_\_\_\_ 691.6 ppm

\_\_\_\_\_ Lower Limit: \_\_\_\_\_ 421.0 ppm

\_\_\_\_\_ Test value +/- 2 std. Dev.: \_\_\_\_\_ YES